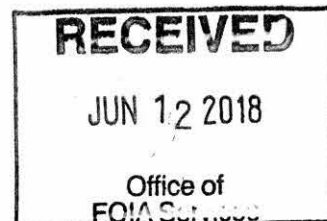




18-04774-E

FOIA / PA Officer John Livornese
U.S. Securities & Exchange Commission
FOIA Office
100 F Street NE, Mail Stop 5100
Washington, DC 20549



June 12, 2018

Dear Mr. Livornese:

I request pursuant to the Freedom of Information Act (FOIA) 5 U.S.C. § 552. As Amended by Public Law No. 104-231, 110 Stat. 3048, copies of the following agreement.

Exhibit 10.1 to Form 10-Q filed on 05/15/1998 by Endocardial Solutions Inc.

Exhibit Title: License Agreement

CIK: 940659

Sectilis will pay up to \$61 for research, copies and review fees for all of the abovementioned agreements. Please forward all releasable material for copying. My daytime telephone number is 202-798-8809. Please call me or e-mail at research@sectilis.com to discuss the total cost or estimated cost of this research/copies should the amount exceed the price indicated in this request.

Sincerely,

Stella Vasconcellos
Research Assistant
Sectilis LLC
6931 Arlington Rd. # 580
Bethesda, MD 20814



UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
STATION PLACE
100 F STREET, NE
WASHINGTON, DC 20549-2465

Office of FOIA Services

June 29, 2018

Ms. Stella Vasconcellos
Sectilis LLC
6931 Arlington Rd. #580
Bethesda, MD 20814

RE: Freedom of Information Act (FOIA), 5 U.S.C. § 552
Request No. 18-04774-E

Dear Ms. Vasconcellos:

This letter is in response to your request, dated and received in this office on June 12, 2018, for Exhibit 10.1 to the Form 10-Q filed by Endocardial Solutions, Inc. on May 15, 1998.

Your request is granted in full. We are enclosing 43 pages with this letter.

As shown on the enclosed invoice, the processing fee is \$30.50 in accordance with our fee schedule. You may use our [Online Payment](#) option to pay by debit or credit card. If paying by mail, checks or money orders should be made payable to the SEC and a copy of the invoice should be mailed to our payment address: Enterprise Services Center, HQ Bldg., Room 181, AMZ-341, 6500 South MacArthur Boulevard, Oklahoma City, OK 73169. Please refer to the following link for detailed instructions on how to remit payments. <http://www.sec.gov/about/offices/ofm.htm>

If you have any questions, please contact me at Gbenoua@sec.gov or (202) 551-5327. You may also contact me at foiapa@sec.gov or (202) 551-7900. You also have the right to seek assistance from Jeffery Ovall as a FOIA Public Liaison or contact the Office of Government Information Services (OGIS) for dispute resolution services. OGIS can be reached at 1-877-684-6448 or Archives.gov or via e-mail at ogis@nara.gov.

Sincerely,

Amy Gbenou

Amy Gbenou
FOIA Research Specialist

Enclosure

CONFIDENTIAL
OFFICE OF THE SECRETARY
JUL 20 1998

LICENSE AGREEMENT

This License Agreement is made this 30th day of January, 1998, by and among Endocardial Solutions, Inc. ("Licensee"), a Delaware corporation, and Medtronic, Inc. ("Medtronic"), a Minnesota corporation.

RECITALS:

A. Medtronic has developed certain technology related to catheter navigation and mapping.

B. Medtronic desires to grant, and Licensee desires to obtain, a license to the "Licensed Technology" (as defined below) in the "Field of Use" (as defined below) in accordance with all of the terms of this Agreement.

NOW, THEREFORE, the parties hereto agree as follows:

ARTICLE 1 Definitions

As used herein, the following definitions and terms shall have the designated meanings:

1.1 "Action" shall mean any claim, action, suit or proceeding, whether civil or criminal, or in law or equity and including any arbitration.

1.2 "Affiliate" of any entity shall mean any other entity that directly, or indirectly through one or more intermediaries, controls, or is controlled by, or is under common control with, the first entity. "Control" shall mean owning more than 50 percent of the total voting power of the entity.

1.3 "Confidential Information" shall mean all written or oral information provided to a party (the "receiving party") by a party (the "disclosing party") or its employees, agents or consultants, excluding any information which:

- (a) is or becomes publicly available through no fault of the receiving party; or
- (b) can be reasonably demonstrated to have been known to the receiving party independently of any disclosure of "Confidential Information" by the disclosing party or its employees, agents or consultants; or
- (c) is disclosed to the receiving party by a third party who, to the best of the receiving party's knowledge, is lawfully in possession of the same and has the right to make such disclosure without restriction; or

(d) has been independently developed by the receiving party without reference to the information disclosed to the receiving party by the disclosing party or its employees, agents or consultants.

All "Confidential Information" disclosed to the receiving party in writing under this Agreement shall ultimately be in writing and bear a legend "Proprietary", "Confidential" or words of similar import.

1.4 "Expiration" or "Expired" shall mean with respect to a particular patent, the patent's expiration, abandonment, cancellation, disclaimer, award to another party other than Medtronic or an Affiliate of Medtronic in an interference proceeding, or declaration of invalidity or unenforceability of all claims thereof by a court or other authority of competent jurisdiction (including a re-examination or reissue proceeding) from which no further appeal has or can be taken. References to an "Unexpired" patent shall mean a patent that has not Expired.

1.5 "Field of Use" shall mean electrophysiological intracardiac mapping applications for the treatment of cardiac arrhythmias.

1.6 "First Commercial Introduction" shall mean the first commercial sale by Licensee of any product which incorporates any invention described in the patents and other intellectual property constituting the Licensed Technology within the Field of Use in the United States, Japan or any country that is a member of the European Union.

1.7 "Law" shall mean any law, regulation, rule, ordinance or governmental regulation or guideline or any judicial, administrative or arbitration, order or award, judgment, writ, injunction or decree which is applicable to a person or by which a person is bound.

1.8 "Licensed Products" shall mean medical products, devices, or systems, including software, the development, manufacture, use or sale of which uses or incorporates any of the Licensed Technology.

1.9 "Licensed Technology" shall mean (i) the issued patents, and patents arising out of the patent applications, listed on Exhibit A hereto, including, specifically, U.S Patent No. 5,697,377 issued to Dr. Frederik H.M. Wittkamp and assigned to Medtronic, (ii) all reissues, continuations, continuations-in-part, extensions, reexaminations, and foreign counterparts thereof, (iii) all trade secrets and know-how owned by Medtronic prior to the date of this Agreement which relate specifically and directly to 3-D electrode localization devices and techniques as disclosed in the patents or patent applications listed on Exhibit A, including but not necessarily limited to software developed specifically to practice the inventions disclosed in the patents included in the Licensed Technology, and iv) new patents arising out of patent applications filed, or inventions reduced to practice, within twelve (12) months of the "Effective Date" (as defined in Section 3.1) of this Agreement that are owned by Medtronic, arise out of Medtronic's work with Dr. Frederik H.M. Wittkamp and relate specifically and directly to 3-D electrode localization devices and techniques.

confidential

1.10 "Net Sales" of Licensed Products for a particular period shall mean the amounts that Licensee or any Affiliate of Licensee invoices third parties (eliminating transactions between Affiliates) for sales of Licensed Products during such period, excluding sales, use or excise tax, freight, duty or insurance included therein, and credits or repayments due to rejection, defect or return. If Licensee or any Affiliate of Licensee sells at a single price or rate a packaged combination of products, not all of which if sold individually would be Licensed Products, then "Net Sales" of Licensed Products with respect to such sales of packaged products shall equal the total sales price of the packaged combination multiplied by the ratio of the individual retail list price of the Licensed Products contained in the packaged combination to the sum of all individual retail list prices of every item in the packaged combination (if all of such items were sold separately). If all such items are not sold separately, any item not sold separately shall have a price attributed to it for purposes of this definition consistent with pricing of similar products or their functional equivalents. Without limitation of the foregoing, Net Sales shall include all transfers of Licensed Products that Licensee or any Affiliate of Licensee records as a sale pursuant to generally accepted accounting principles consistently applied. Net Sales which are denominated in currencies other than U.S. Dollars shall be converted into U.S. Dollars on a monthly basis at the average of the applicable daily exchange rates listed in the Wall Street Journal for the calendar month in which such Net Sales occurred, or on such other basis to which the parties may hereafter mutually agree.

1.11 "Product Liability Claims" shall mean claims for personal injury or death based on alleged breach of product warranty, strict liability in tort, or negligent product design or manufacture.

1.12 "Quarter" means each three-month period ending March 31, June 30, September 30, and December 31.

ARTICLE 2

License; Term and Termination

2.1 License Grant. Subject to the terms and provisions hereof, Medtronic hereby grants to Licensee a worldwide, non-transferable, and non-sublicensable (except as expressly provided in Section 2.6 below) license to make, have made, use and sell Licensed Products in the Field of Use. The licensed granted shall be co-exclusive, meaning that Medtronic or any Affiliate of Medtronic shall also have the worldwide right to make, have made, use, sell or otherwise commercialize and exploit the Licensed Technology in the Field of Use, provided that Medtronic shall not grant any licenses (other than to an Affiliate of Medtronic or a supplier of Medtronic or its Affiliate, provided any sale of Licensed Products by such supplier is to Medtronic or a Medtronic Affiliate or is under trademarks owned by Medtronic or a Medtronic Affiliate) to the Licensed Technology in the Field of Use during the term of this Agreement. In addition, Medtronic agrees that it shall not manufacture Licensed Products in the Field of Use on an original equipment manufacturer basis ("Medtronic OEM basis") for any person or entity. The term "Medtronic OEM basis" includes, without limitation, the manufacture and sale of a Licensed Product to any person or entity for (i) incorporation into or sale as such other person's or entity's product, or (ii) the resale of such

Licensed Product by such person or entity under trademarks other than those owned by Medtronic or a Medtronic Affiliate.

2.2 Restriction on OEM Sales. The license granted to Licensee pursuant to this Agreement shall not be used by Licensee in such a way as to manufacture Licensed Products on an original equipment manufacturer basis ("Licensee OEM basis") for any person or entity. The term "Licensee OEM basis" includes, without limitation, the manufacture and sale of a Licensed Product to any person or entity for (i) incorporation into or sale as such other person's or entity's product, or (ii) the resale of such Licensed Product by such person or entity under trademarks other than those owned by Licensee. It is the intent of the parties that the license granted herein be used for the sole and exclusive benefit of Licensee and its Affiliates in the Field of Use.

2.3 Term of License. Unless otherwise terminated under provisions of this Article 2: the license granted under Section 2.1, as it pertains to the patents and patent applications included within the Licensed Technology, shall continue until such time as all of the patents included within the Licensed Technology (and all extensions thereof) have Expired while the license granted under Section 2.1, as it pertains to any know-how or trade secret information of Medtronic included within the Licensed Technology, shall continue in perpetuity.

2.4 Termination. Notwithstanding the provisions of Section 3.5, if Licensee (i) violates the prohibitions on sublicensing or manufacturing on an OEM basis under this Agreement, or (ii) fails to restrict its sales of Licensed Products and other activities hereunder to the Field of Use, then Medtronic may terminate this Agreement, at its option and without prejudice to any of its other legal and equitable rights and remedies, including, but not limited to, seeking monetary damages and/or an injunction, by giving Licensee sixty (60) days' notice in writing, particularly specifying the breach. Such notice of termination shall not be effective if Licensee cures the specified breach within such sixty (60) day period. During such 60-day period, one or more executive officers of each party (meaning for purposes hereunder any vice president or higher level officer) shall meet or correspond to discuss such alleged breach and/or attempted cure thereof, and attempt in good faith to resolve any dispute between the parties with respect thereto; provided that if any such dispute is not resolved to Medtronic's satisfaction, then Medtronic may terminate this Agreement without prejudice to any of its other legal and equitable rights and remedies including, but not limited to, seeking monetary damages and/or an injunction. If Licensee cures the breach during the 60-day period but, within one (1) year thereafter, engages in the same or a substantially similar breach, then Medtronic may terminate this Agreement, at its option and without prejudice to any of its other legal and equitable rights and remedies, including, but not limited to, seeking monetary damages and/or an injunction, by giving written notice to Licensee and without providing Licensee further opportunity to cure such breach. Licensee may terminate this Agreement at any time in its discretion upon sixty (60) days' prior written notice. Termination of this Agreement shall not affect Licensee's obligation to grant and honor the warrant under Section 3.2 and, if First Commercial Introduction or Change of Control of Licensee occurs prior to such termination, the warrant under Section 3.3 and shall not result in any refund to Licensee of any consideration previously paid to Medtronic. The parties acknowledge that, with respect to any other breaches by Licensee of the terms, conditions or agreements of this Agreement, Medtronic may pursue its full legal and

equitable rights and remedies against Licensee, including, but not limited to, seeking monetary damages and/or an injunction.

2.5 Delivery and Return of Confidential Information. Upon termination of this Agreement or the license granted hereunder as provided herein, Licensee shall within 30 days of such termination return to Medtronic all Confidential Information of Medtronic. Notwithstanding the foregoing, Licensee shall have the right to retain in strict confidence one copy of such Confidential Information in its legal department files solely for archival purposes only.

2.6 No Sublicense, Transfer or Change of Control.

(a) Licensee may not sublicense any of its rights or obligations under this Agreement, except that Licensee may grant sublicenses to Affiliates of Licensee, provided that (i) Licensee shall cause such sublicensee to comply with all of Licensee's obligations hereunder, and (ii) any such sublicense granted by Licensee shall terminate automatically upon the earlier of such sublicensee ceasing to be an Affiliate of Licensee or termination of this Agreement.

(b) Licensee may not assign or transfer in any manner any of its rights or obligations under this Agreement, except that all of Licensee's rights and obligations under this Agreement may be assigned as part of a sale or other transfer of substantially all of the business of Licensee. If such transfer or if a "Change of Control of Licensee" results in Licensee or its business directly or indirectly becoming part of, or an Affiliate of, a "Medtronic Competitor" as defined in Exhibit B, then in addition to the fees and warrants required under Article 3, after such transfer or such Change of Control of Licensee, Licensee shall pay a royalty (the "Royalty" or "Royalties") equal to two percent (2%) of Net Sales thereafter of Licensed Products. For purposes of this Agreement, a "Change of Control of Licensee" means any of the following events: (i) any "person" (as such term is used in Sections 13(d) and 14(d) of the Securities Exchange Act of 1934) acquires "beneficial ownership" (as defined in Rule 13d-3 under the Securities Exchange Act of 1934), directly or indirectly, of securities of Licensee or of an entity that directly or indirectly owns Licensee, or is an Affiliate that directly or indirectly controls Licensee, (referred to as "Licensee Parent") representing 50% or more of the combined voting power (with respect to the election of directors) of Licensee's or Licensee Parent's, as the case may be, then outstanding securities; (ii) the consummation of a merger, share exchange, combination or consolidation of Licensee or Licensee Parent, as the case may be, with or into any other corporation, which would result in the voting securities of Licensee or Licensee Parent, as the case may be, outstanding immediately prior thereto continuing to represent (either by remaining outstanding or by being converted into voting securities of the surviving entity) less than 50% of the combined voting power (with respect to the election of directors) of the securities of Licensee or Licensee Parent, as the case may be, or of such surviving entity outstanding immediately after such merger, share exchange, combination or consolidation; or (iii) the consummation of a plan of complete liquidation of Licensee or Licensee Parent, as the case may be, or of an agreement for the sale or disposition by Licensee or Licensee Parent, as the case may be, of all or substantially all of Licensee's or Licensee Parent's, as the case may be, business or assets. The parties acknowledge that the intent of this Section is to prevent any of the rights granted to Licensee under this Agreement from inuring to the benefit of any Medtronic Competitor either

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directly or indirectly without thereafter the Royalty on Net Sales of Licensed Products being paid to Medtronic.

2.7 Access to Medtronic's Consultant. Upon reasonable notice by Licensee to Medtronic, during the first two months after execution of the Agreement, Medtronic will use reasonable efforts to make Dr. Frederik H.M. Wittkamp and a lead design engineer of Medtronic that is familiar with the Licensed Technology (mutually selected by the parties) available at such person's place of work to meet with Licensee, subject to Dr. Wittkamp's or such engineer's other commitments and schedule, for up to an aggregate ten hours in the case of Dr. Wittkamp or 40 hours in the case of the design engineer, in the presence of one or more Medtronic representatives, to disclose to Licensee on Medtronic's behalf those trade secrets and know-how included within the Licensed Technology to allow Licensee to better understand and practice the inventions disclosed therein to which the license under this Agreement pertains. No such disclosures by Dr. Wittkamp or Medtronic's design engineer on Medtronic's behalf nor payment to Dr. Wittkamp or Medtronic's design engineer shall be deemed to amend, negate, or otherwise modify the exclusive consulting or employment relationship between Dr. Wittkamp or such design engineer, as the case may be, and Medtronic or to transfer or otherwise grant any rights to Licensee other than those rights to the Licensed Technology specifically set forth in this Agreement.

confidential

ARTICLE 3

License Cash Payment and Warrants

3.1 License Cash Payment. On the date of the execution of this Agreement by the parties (the "Effective Date"), Licensee shall immediately pay to Medtronic a non-refundable royalty of One Million Five Hundred Thousand Dollars (\$1,500,000) by wire transfer of such amount in immediately available funds to an account designated by Medtronic.

3.2 Initial Warrant. On the Effective Date, Licensee shall also immediately grant and deliver to Medtronic or to a subsidiary designated by Medtronic, as an additional royalty payment, the warrant (the "Initial Warrant") attached as Exhibit C, entitling the holder to purchase 447,554 shares of common stock of Licensee, which Licensee represents is equal to 5% (five percent) of the total issued and outstanding common stock of Licensee as of the Effective Date. The per share exercise price of such Initial Warrant shall be the average closing price of Licensee's common stock for the twenty (20) trading days ending on and including the trading day immediately preceding the Effective Date. The Initial Warrant shall be immediately exercisable and shall expire four (4) years from the Initial Warrant's issuance. Licensee represents that the Initial Warrant conforms to and complies with the specifications set forth in this Section 3.2.

3.3 Additional Warrant. Upon the First Commercial Introduction, Licensee shall promptly grant and deliver (within thirty (30) days of the First Commercial Introduction) to Medtronic or to a subsidiary designated by Medtronic, as an additional royalty payment, an additional warrant (the "Additional Warrant"), in the form attached as Exhibit C, except that: (i) the Additional Warrant shall entitle the holder to purchase 223,777 shares of common stock of Licensee, which Licensee represents is equal to 2.5% (two and one-half percent) of the total issued

and outstanding common stock of Licensee as of the Effective Date; (ii) the per share exercise price of such Additional Warrant shall be equal to: (A) 1.25 (one and one-quarter) times the average closing price of Licensee's common stock for the twenty (20) trading days ending on and including the trading day immediately preceding the date of the First Commercial Introduction, in the event the Additional Warrant is being issued because of the First Commercial Introduction, (B) the average closing price of Licensee's common stock for the twenty (20) trading days ending on and including the trading day immediately preceding the date of the announcement of the proposed Change of Control, in the event the Additional Warrant is being issued because of a Change of Control as provided in clause (iv) below, and (C) 1.25 (one and one-quarter) times the average closing price of Licensee's common stock for the twenty (20) trading days ending on and including the trading day immediately preceding the 24-month anniversary date of the execution of this Agreement, in the event the Additional Warrant is being issued prior to the First Commercial Introduction as provided in the last sentence of this Section 3.3; (iii) the Additional Warrant shall not become exercisable (except in the event of a Change of Control of Licensee, as defined in Section 2.6) until the one-year anniversary of the Additional Warrant's issuance and shall expire five (5) years from the date of the Additional Warrant's issuance; and (iv) notwithstanding anything herein to the contrary, the Additional Warrant shall, if not already issued, be issued immediately prior to any Change of Control of Licensee and, shall, by its terms, automatically become exercisable immediately prior to any Change of Control of Licensee. Furthermore, if the First Commercial Introduction has not occurred by the twenty-four (24) month anniversary of the execution of this Agreement, then the Licensee shall have the right to issue and deliver to Medtronic the Additional Warrant as of such twenty-four (24) month anniversary, provided, however, that if Licensee does not issue and deliver such Additional Warrant to Medtronic by such twenty-four (24) month anniversary, the license granted under this Agreement shall, without any action on the part of the parties hereto, thereafter be a nonexclusive license and the Additional Warrant shall not be issued and delivered until the First Commercial Introduction.

3.4 Registration Rights. Upon execution of this Agreement, Licensee shall immediately execute and deliver to Medtronic or to a subsidiary designated by Medtronic the registration rights agreement (the "Registration Rights Agreement") attached as Exhibit D hereto, providing the registration rights set forth therein with respect to the shares issuable pursuant to the Initial Warrant and the shares issuable pursuant to the Additional Warrant.

3.5 Paid-Up License. Upon receipt by Medtronic of the royalty to be paid by Licensee in cash under Section 3.1 and receipt by Medtronic or its designated subsidiary of the warrants, constituting additional royalties, to be granted by Licensee under Sections 3.2 and 3.3, the license granted by Medtronic to Licensee under Section 2.1 shall be fully paid-up and no further payments shall be due to Medtronic from Licensee under this Agreement, except for the Royalty payments as and when required under Sections 2.6 and 4.5.

ARTICLE 4
Additional Obligations

4.1 Restrictions on Use. Licensee will use all reasonable efforts to ensure that all Licensed Products designed, developed, manufactured or sold by Licensee or its Affiliates are not used outside of the Field of Use. Such reasonable efforts shall include, but not be limited to:

(i) causing all such Licensed Products to be packaged, labeled, advertised, marketed and otherwise identified and promoted in such manner as to ensure to the fullest extent reasonably possible, subject to all applicable laws and regulations, that such Licensed Products are not used in an application outside of the Field of Use; and

(ii) advising Licensee's and its Affiliates' sales forces of such Licensed Products, and any authorized distributors which are actively promoting, representing and selling such Licensed Products, of the permitted Field of Use hereunder and the provisions of this Section 4.1.

4.2 Confidentiality. The parties acknowledge that the patent applications listed in Exhibit A hereto, the inventions claimed therein, and all trade secrets and know-how included within the Licensed Technology constitute "Confidential Information" of Medtronic, subject to the exceptions set forth in Section 1.3. Licensee agrees not to disclose or use any Medtronic Confidential Information except as expressly permitted in connection with the exercise of its rights hereunder. Licensee shall not disclose Medtronic Confidential Information to any employee or consultant unless such employee or consultant is obligated under a confidentiality agreement to maintain such Medtronic Confidential Information in strict confidence, and not to use such information other than, in accordance with the terms of this Agreement. Licensee agrees to hold the Medtronic Confidential Information in strict confidence and treat it with not less than the same degree of care to avoid disclosure as Licensee employs with respect to Licensee's information of like importance.

4.3 Infringement by Third Party. Licensee shall promptly notify Medtronic in writing if Licensee knows or has reason to believe that the rights of Medtronic or Licensee relating to the Licensed Technology are being infringed by a third party.

4.4 Covenant Regarding Claims. Licensee agrees, for itself and for its Affiliates, successors, assigns, and other parties claiming any title or license to any Licensed Technology, not to sue or otherwise assert any claim against Medtronic, or any of its Affiliates, successors, assigns, customers, vendors, or others in contractual privity with any of the foregoing, by reason of or with respect to the use of such Licensed Technology, or any improvements thereto, by Medtronic or any of its Affiliates or any such other party; provided, however, the foregoing shall not prevent any action on the part of Licensee, its Affiliates, successors or assigns brought to enforce Licensee's rights and Medtronic's obligations under this Agreement.

4.5 Reports and Payments. From and after the event giving rise to the Royalty obligation as provided in Section 2.6, within forty-five (45) days after the end of each Quarter,

Licensee shall provide Medtronic with a written report indicating (i) the amount of Net Sales of Licensed Products during such Quarter, and (ii) the amount of the Royalties due for such Quarter. Simultaneously with making such report, Licensee shall pay to Medtronic the amount of Royalties then due.

4.6 Records. Licensee agrees to keep accurate written records sufficient in detail to enable Medtronic to verify the information contained in the reports described in Section 4.5. Such records for a particular Quarter shall be retained by Licensee for a period of not less than four years after the end of such Quarter.

4.7 Audit of Records. Upon reasonable notice and during regular business hours, Licensee shall from time to time (but no more frequently than once annually) make available the records referred to in Section 4.6 for audit by an independent nationally recognized accounting firm selected by Medtronic to verify the accuracy of the reports provided to Medtronic. Such representatives shall execute a suitable confidentiality agreement reasonably acceptable to Licensee prior to conducting such audit. Such representatives may disclose to Medtronic only their conclusions regarding the accuracy and completeness of the reports described in Section 4.5 and the records related thereto, and shall not disclose Licensee's confidential business information to Medtronic without the prior written consent of Licensee. Such audits shall be at Medtronic's cost and expense; provided that if any such audit reveals underpayment of Royalties by five percent (5%) or more for any year, then Licensee shall reimburse Medtronic for the fees and expenses of Medtronic's independent auditors incurred by Medtronic in connection with such audit.

ARTICLE 5 Intellectual Property

5.1 No Other Representation or Warranty. Medtronic represents that it owns all right, title and interest in and to the Licensed Technology. MEDTRONIC MAKES NO OTHER WARRANTIES, EXPRESS OR IMPLIED, WITH RESPECT TO THE LICENSED TECHNOLOGY OR ANY LICENSED PRODUCTS, INCLUDING WITHOUT LIMITATION, ANY WARRANTY OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, PATENTABILITY, PATENT VALIDITY, NON-INFRINGEMENT, OR WARRANTIES ARISING FROM COURSE OF DEALING OR USAGE OF TRADE.

5.2 Control of Licensed Technology. Medtronic shall have the sole and exclusive right, in Medtronic's absolute discretion, to exercise complete control over the Licensed Technology, including, but not limited to, the right to (i) prosecute any alleged infringement, misappropriation or misuse of the Licensed Technology, and (ii) apply for, prosecute, or cause the issuance, amendment, abandonment, maintenance, re-examination or reissue of any patents included within the Licensed Technology, or any patent applications listed in Exhibit A hereto.

5.3 Indemnification.

(a) Licensee shall indemnify, defend and hold harmless Medtronic, its Affiliates and Medtronic's and its Affiliates' respective officers, directors, shareholders, employees and agents (collectively, all such indemnitees are referred to in this Section 5.3(a) as "Medtronic Indemnitees") against and in respect of any and all claims, demands, losses, obligations, liabilities, damages (and including without limitation compensatory and punitive damages), deficiencies, Actions, settlements, judgments, costs and expenses which the Medtronic Indemnitees may incur or suffer or with which it may be faced (including reasonable costs and legal fees incident thereto or in seeking indemnification therefor) (collectively referred to as "Medtronic Damages") arising out of or based upon (i) any Product Liability Claims resulting from Licensee's development, manufacture, use, or sale of any Licensed Product, or (ii) any breach of this Agreement by Licensee.

(b) Medtronic shall indemnify and hold harmless Licensee, its Affiliates and Licensee's and its Affiliates' respective officers, directors, shareholders, employees and agents (collectively, all such indemnitees are referred to in this Section 5.3(b) as "Licensee Indemnitees") against and in respect of any and all demands, losses, obligations, liabilities, damages (and including without limitation compensatory and punitive damages), deficiencies, Actions, settlements, judgments, costs and expenses which the Licensee Indemnitees may incur or suffer or with which it may be faced (including reasonable costs and legal fees incident thereto or in seeking indemnification therefor) (collectively referred to as "Licensee Damages") arising out of or based upon any breach of this Agreement by Medtronic.

5.4 Licensee Regulatory Interaction Rights. Notwithstanding Section 5.2 above, interaction with the regulatory agencies in any country, including, without limitation the FDA, concerning Licensed Products of Licensee or its Affiliates in the Field of Use shall be exclusively conducted by Licensee and Licensee shall be the official company sponsor. Subject to Section 5.3(a) hereof, Licensee shall have complete authority to act as Licensee, in its sole discretion, deems appropriate with respect to any such regulatory matter.

5.5 Licensee Marketing Rights. Subject to Sections 4.1 and 5.3(a) hereof, nothing herein shall prevent or limit Licensee from setting its own prices for Licensed Products or determining Licensee's marketing policies and practices in its sole discretion.

5.6 Trademark. Nothing in this Agreement shall be deemed to grant to Licensee any right to use the trademark "Medtronic", the Medtronic corporate logo, or any other trademark owned by Medtronic or its Affiliates.

ARTICLE 6 Representations & Warranties

6.1 Organization. Each party represents and warrants to the other party that such party is a corporation duly organized, validly existing, and in good standing under the laws of the jurisdiction of its incorporation.

6.2 Authorization of Transaction. Each party represents and warrants to the other party that it has full power and authority (including full corporate power and authority) to execute and deliver this Agreement and to perform its obligations hereunder. All necessary corporate proceedings (including any necessary approval by a party's board of directors) have been taken by such party to duly authorize the execution, delivery, and performance of this Agreement by such party. This Agreement constitutes the valid and legally binding obligation of such party, enforceable against such party in accordance with its terms and conditions.

ARTICLE 7 Miscellaneous

7.1 Assignment. Except as set forth in Section 2.6, Licensee may not assign or transfer in any manner (whether by merger, share exchange, combination or consolidation of any type, operation of Law, purchase or otherwise) any of its rights or obligations under this Agreement. Any prohibited assignment or transfer shall be null and void. Medtronic may assign or otherwise transfer its rights and obligations under this Agreement to any successor in interest (by merger, share exchange, combination, consolidation, operation of Law, purchase or otherwise), provided that such assignee or successor agrees to be bound by the terms hereof.

7.2 Entire Agreement. This Agreement constitutes the entire agreement of the parties with respect to the subject matter hereof and supersedes all previous proposals or agreements, oral or written, and all negotiations, conversations or discussions heretofore had between the parties related to the subject matter of this Agreement.

7.3 Survival. All of the covenants, warranties and indemnifications made in this Agreement are intended, or by their terms and provisions required, to be observed and performed by the parties after the execution and delivery, and the termination hereof and shall survive such execution, delivery and termination and continue thereafter in full force and effect.

7.4 Waiver, Discharge, etc. This Agreement may not be released, discharged, abandoned, changed or modified in any manner, except by an instrument in writing signed on behalf of each of the parties to this Agreement by their duly authorized representatives. The failure of either party to enforce at any time any of the provisions of this Agreement shall in no way be construed to be a waiver of any such provision, nor in any way to affect the validity of this Agreement or any part of it or the right of either party after any such failure to enforce each and every such provision. No waiver of any breach of this Agreement shall be held to be a waiver of any other or subsequent breach.

7.5 Execution in Counterparts. This Agreement may be executed in one or more counterparts, all of which shall be considered one and the same agreement, and shall become a binding agreement when one or more counterparts have been signed by each party and delivered to the other party.

7.6 Titles and Headings: Construction. The titles and headings to Sections herein are inserted for the convenience of reference only and are not intended to be a part of or to affect the meaning or interpretation of this Agreement. This Agreement shall be construed without regard to any presumption or other rule requiring construction hereof against the party causing this Agreement to be drafted.

7.7 Benefit. Nothing in this Agreement, expressed or implied, is intended to confer on any person other than the parties to this Agreement or their respective permitted successors or assigns, any rights, remedies, obligations or liabilities under or by reason of this Agreement.

7.8 Notices. All notices or other communications to a party required or permitted hereunder shall be in writing and shall be delivered personally or by telecopy (receipt confirmed) to such party (or, in the case of an entity, to an executive officer of such party) or shall be given by certified mail, postage prepaid with return receipt requested, addressed as follows:

if to Licensee, to:

Endocardial Solutions, Inc.
1350 Energy Lane, Suite 110
St. Paul, Minnesota 55108-5254
Attention: President and Chief Executive Officer
Telecopy Number: (612) 644-7897

and if to Medtronic, to:

Medtronic, Inc.
Corporate Center
7000 Central Avenue N.E.
Minneapolis, Minnesota 55432

with separate copies thereof addressed to:

Attention: General Counsel
Telecopy number: (612) 572-5459

Attention: Vice President, Corporate Development and
Associate General Counsel
Telecopy number: (612) 572-5404

Licensee or Medtronic may change their respective above-specified recipient and/or mailing address by notice to the other party given in the manner herein prescribed. All notices shall be deemed given on the day when actually delivered as provided above (if delivered personally or by telecopy) or on the day shown on the return receipt (if delivered by mail).

7.9 Severability. If any provision of this Agreement is held invalid by a court of competent jurisdiction, the remaining provisions shall nonetheless be enforceable according to their terms. Further, if any provision is held to be overbroad as written, such provision shall be deemed amended to narrow its application to the extent necessary to make the provision enforceable according to applicable Law and shall be enforced as amended.

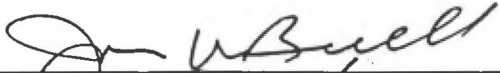
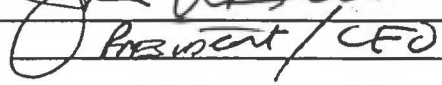
7.10 Marking. If requested by Medtronic, Licensee shall cause all Licensed Products manufactured or sold under this license in the United States by it or its Affiliates with a notice to the effect that such product is licensed under the U.S. patents designated by Medtronic.

7.11 Right of First Offer. During the term of this Agreement, if Medtronic determines to license any of the Licensed Technology for the field of percutaneous myocardial revascularization, then Medtronic shall provide notice to Licensee of its determination and give Licensee the opportunity to negotiate in good faith with Medtronic for the grant of a license to Licensee to make, use and sell Licensed Products in the field of percutaneous myocardial revascularization. If a definitive agreement for such license has not been entered into by the parties within sixty (60) days of the above-mentioned notice, then Medtronic shall have no further obligation to conduct discussions with Licensee and may enter into such agreements with third parties where the material terms, in the aggregate, are no less favorable to Medtronic than those offered by Licensee for acceptance by Medtronic to form a binding agreement during such discussions with Medtronic.

(Signatures on the following page)

IN WITNESS WHEREOF, each of the parties has caused this License Agreement to be executed in the manner appropriate to each, effective as of the date first above written.

ENDOCARDIAL SOLUTIONS, INC.

By: 
Its:  President / CEO

MEDTRONIC, INC.

By: _____
Its: _____

JAN 28 '98 03:07PM

IN WITNESS WHEREOF, each of the parties has caused this License Agreement to be executed in the manner appropriate to each, effective as of the date first above written.

ENDOCARDIAL SOLUTIONS, INC.

By: _____
Its: _____

MEDTRONIC, INC.

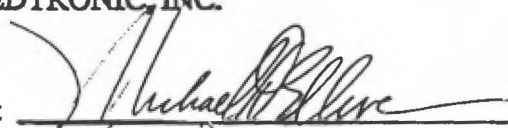
By:  _____
Its: VICE PRESIDENT

Exhibit A

U.S. Patents

Patent No. 5,697,377, Issued 12/16/97, Inventor: Frederik H.M. Wittkamp,
Entitled: Catheter Mapping System and Method

confidential

U.S. Patent Applications

Serial No. 08/904,588, Filed 8/1/98, Inventor: Frederik H. M. Wittkamp,
Entitled: Catheter Mapping System & Method

confidential

Exhibit B

MEDTRONIC COMPETITORS

"Medtronic Competitors" for purposes of this Agreement include the following entities, any Affiliates of any of the following entities or of any group or combination of the following entities, or any successor thereto:

Broad Line

Arrow International
Baxter
Becton Dickinson
Biotronik GmbH
Boston Scientific
C.R. Bard
Cook Medical
ELA Medical S.A.
Endosonics
Guidant Corporation
InControl
Johnson & Johnson
Mallinckrodt
Pfizer, Inc.
St. Jude Medical
Sulzer Ltd.
Sulzermedica
Terumo Corporation
United States Surgical Corporation

Other

Advanced Coronary Technologies
Arterial Vascular Engineering
Cardiovascular Dynamics
EP Medsystems
Global Therapeutics
Isostent
Kensey Nash
Merit Medical
Neocardia
Novoste
Perclose

Exhibit C

Warrant

THIS WARRANT, AND THE SHARES OF COMMON STOCK ISSUABLE UPON EXERCISE HEREOF, HAVE NOT BEEN REGISTERED UNDER THE SECURITIES ACT OF 1933, AS AMENDED, OR APPLICABLE STATE SECURITIES LAWS AND MAY NOT BE REOFFERED OR SOLD, TRANSFERRED, PLEDGED, HYPOTHECATED OR OTHERWISE DISPOSED OF, EXCEPT PURSUANT TO (1) REGISTRATION OR (2) AN OPINION OF COUNSEL FOR THE COMPANY OR OTHER COUNSEL REASONABLY ACCEPTABLE TO THE COMPANY TO THE EFFECT THAT SUCH REGISTRATION IS NOT REQUIRED.

WARRANT

To Purchase 447,554
Shares of Common Stock of

ENDOCARDIAL SOLUTIONS, INC.

January 30, 1998

Endocardial Solutions, Inc., a Delaware corporation (the "Company"), for value received, hereby certifies that Medtronic Asset Management, Inc., a Minnesota corporation, or its registered assigns (the "Holder"), is entitled, subject to the terms set forth below, upon exercise of this Warrant to purchase from the Company, at any time or from time to time on or after the date hereof and on or before 11:59 p.m. (Minneapolis, Minnesota time) on the four-year anniversary of the date hereof, up to Four Hundred Forty-seven Thousand Five Hundred Fifty-four (447,554) shares of Common Stock, \$.01 par value, of the Company ("Common Stock") at a purchase price per share equal to \$11.1125 (subject to adjustment in accordance with Section 4 hereof), which number of shares the Company hereby represents and warrants to equal five percent (5%) of the total number of shares of Common Stock issued and outstanding on the date hereof, and which per share purchase price the Company hereby represents and warrants to equal the average closing price of Common Stock for the twenty (20) trading days ending on and including the trading day immediately preceding the date hereof. The shares issuable upon exercise or conversion of this Warrant, and the purchase price per share, each as adjusted from time to time pursuant to the provisions of this Warrant, are hereinafter referred to as the "Warrant Shares" and the "Exercise Price," respectively.

This Warrant is further subject to the following provisions, terms and conditions:

1. Exercise of Warrant. This Warrant may be exercised by the Holder, in whole or in part (but not as to any fraction of a share of Common Stock), by surrendering this Warrant, with the Exercise Form attached hereto as Exhibit A filled-in and duly executed by such Holder or by such Holder's duly authorized attorney, to the Company at its principal office accompanied by payment of the Exercise Price in the form of a check or wire transfer in the amount of the Exercise Price multiplied by the number of shares as to which the Warrant is being exercised.

2. Conversion of Warrant.

(a) The Holder shall also have the right (the "Conversion Right") to convert all or any portion of this Warrant into such number of shares (rounded to the nearest whole share) of Company Common Stock equal to the quotient obtained by dividing (i) the "Aggregate Warrant Spread" as of the date the Conversion Right is exercised, by (ii) the "Market Price of the Common Stock" as of the date the Conversion Right is exercised. The Conversion Right shall be exercisable at any time or from time to time prior to expiration of this Warrant by surrendering this Warrant with the Conversion Form attached hereto as Exhibit B filled-in and duly executed by such Holder or by such Holder's duly authorized attorney to the Company at its principal office.

(b) For purposes of this Section 2, the "Aggregate Warrant Spread" of all or a portion of this Warrant as of a particular date shall equal (i) the Market Price of the Common Stock multiplied by the number of shares of Common Stock purchasable upon exercise of all or such portion of this Warrant on such date, minus (ii) the Exercise Price multiplied by the number of shares of Common Stock purchasable upon exercise of all or such portion of this Warrant on such date. For purposes of this Section 2, the "Market Price of the Common Stock" as of a particular date shall equal: (i) if the Common Stock is traded on an exchange or is quoted on either the Nasdaq National Market or Small-Cap Market, then the average of the closing or last sale prices, respectively, reported for the ten (10) trading days immediately preceding such date, or (ii) if the Common Stock is not traded on an exchange, the Nasdaq National Market, or the Nasdaq Small-Cap Market but is traded in the local over-the-counter market, then the average of the mid-points between the highest bid and lowest asked quotations for each of the ten (10) trading days immediately preceding such date.

3. Effective Date of Exercise or Conversion. Each exercise or conversion of this Warrant shall be deemed effective as of the close of business on the day on which this Warrant is surrendered to the Company as provided in Section 1 or Section 2(a) above. At such time, the person or persons in whose name or names any certificates for Warrant Shares shall be issuable upon such exercise or conversion shall be deemed to have become the holder or holders of record of the Warrant Shares represented by such certificates. Within ten (10) days after the exercise or conversion of this Warrant in full or in part, the Company will, at its expense, cause to be issued in the name of and delivered to the Holder or such other person as the Holder may (upon payment by such Holder of any applicable transfer taxes) direct: (i) a certificate or certificates for the number of full Warrant Shares to which such Holder is entitled upon such exercise or conversion, and (ii) unless this Warrant has expired, a new Warrant or Warrants (dated the date hereof and in form identical hereto) representing the right to purchase the remaining number of shares of Common Stock, if any, with respect to which this Warrant has not then been exercised or converted.

4. Adjustments to Exercise Price. The above provisions are, however, subject to the following:

(a) (i) If the Company shall at anytime after the date of this Warrant subdivide or combine the outstanding shares of Common Stock or declare a dividend payable in Common Stock, then the number of shares of Common Stock

for which this Warrant may be exercised as of immediately prior to the subdivision, combination or record date for such dividend payable in Common Stock shall forthwith be proportionately decreased, in the case of combination, or increased, in the case of subdivision or dividend payable in Common Stock.

(ii) If the Company shall at anytime after the date of this Warrant subdivide or combine the outstanding shares of Common Stock or declare a dividend payable in Common Stock, the Exercise Price in effect immediately prior to the subdivision, combination or record date for such dividend payable in Common Stock shall forthwith be proportionately increased, in the case of combination, or decreased, in the case of subdivision or dividend payable in Common Stock.

(b) If any capital reorganization or reclassification of the capital stock of the Company, or share exchange, combination, consolidation or merger of the Company with another corporation, or the sale of all or substantially all of its assets to another corporation shall be effected in such a way that holders of Common Stock shall be entitled to receive stock, securities or assets with respect to or in exchange for Common Stock, then, as a condition of such reorganization, reclassification, share exchange, combination, consolidation, merger or sale, lawful and adequate provision shall be made whereby the Holder shall thereafter have the right to receive upon exercise of this Warrant upon the basis and upon the terms and conditions specified in this Warrant and in lieu of the shares of the Common Stock of the Company into which this Warrant was immediately theretofore exercisable or convertible, such shares of stock, securities or assets as may be issued or payable with respect to or in exchange for a number of outstanding shares of such Common Stock equal to the number of shares of such stock into which this Warrant was immediately theretofore exercisable had such reorganization, reclassification, share exchange, combination, consolidation, merger or sale not taken place, and in any such case appropriate provisions shall be made with respect to the rights and interests of Holder to the end that the provisions hereof (including without limitation provisions for adjustments of the Exercise Price and of the number of shares purchasable upon exercise or conversion of this Warrant) shall thereafter be applicable, as nearly as may be, in relation to any shares of stock, securities or assets thereafter deliverable upon the exercise or conversion hereof. The Company shall not effect any such share exchange, combination, consolidation, merger or sale, unless prior to the consummation thereof the successor corporation (if other than the Company) resulting from such share exchange, combination, consolidation or merger or the corporation purchasing such assets shall assume by written instrument executed and mailed to the Holder at the last address of such Holder appearing on the books of the Company, the obligation to deliver to such Holder such shares of stock, securities or assets which, in accordance with the foregoing provisions, such Holder may thereafter be entitled to receive upon exercise or conversion of this Warrant.

(c) If at anytime after the date of this Warrant the Company distributes to all holders of Common Stock any assets (excluding ordinary cash dividends), debt securities, or any rights or warrants to purchase debt securities, assets or other securities (including Common Stock), the Exercise Price shall be adjusted in accordance with the formula:

$$E^1 = \frac{E \times (O \times M) - F}{O \times M}$$

where:

- E¹ = the adjusted Exercise Price.
- E = the current Exercise Price.
- M = the average market price of Common Stock for the 30 consecutive trading days commencing 45 trading days before the record date mentioned below.
- O = the number of shares of Common Stock outstanding on the record date mentioned below.
- F = the fair market value on the record date of the aggregate of all assets, securities, rights or warrants distributed. The Company's Board of Directors shall determine the fair market value in the exercise of its reasonable judgment.

The adjustment shall be made successively whenever any such distribution is made and shall become effective immediately after the record date for the determination of stockholders entitled to receive the distribution.

(d) Upon any adjustment of the Exercise Price, then and in each such case, the Company shall give written notice thereof, by first class mail, postage prepaid, addressed to the Holder of this Warrant at the address of such Holder as shown on the books of the Company, which notice shall state the Exercise Price resulting from such adjustment and the increase or decrease, if any, in the number of shares for which this Warrant may be exercised, setting forth in reasonable detail the method of calculation and the facts upon which such calculation is based.

5. Common Stock. As used herein, the term "Common Stock" shall mean and include the Company's presently authorized shares of common stock and shall also include any capital stock of any class of the Company hereafter authorized which shall not be limited to a fixed sum or percentage in respect of the rights of the holders thereof to participate in dividends or in the distribution, dissolution or winding up of the Company.

6. No Voting Rights. This Warrant shall not entitle the Holder to any voting rights or other rights as a shareholder of the Company unless and until exercised or converted pursuant to the provisions hereof.

7. Exercise or Transfer of Warrant or Resale of Common Stock. The Holder, by acceptance hereof, agrees to give written notice to the Company before transferring this Warrant, in whole or in part, or transferring any shares of Common Stock issued upon the exercise or conversion hereof, of such Holder's intention to do so, describing briefly the manner of any proposed transfer. Such notice shall include an opinion of counsel reasonably satisfactory to the Company that (i) the proposed exercise or transfer may be effected without registration or qualification under the Securities Act of 1933, as amended (the "Act") and any applicable state securities or blue sky laws, or (ii) the proposed exercise or transfer has been registered under

such laws. Upon delivering such notice, such Holder shall be entitled to transfer this Warrant or such Warrant Shares, all in accordance with the terms of the notice delivered by such Holder to the Company, provided that an appropriate legend may be endorsed on the certificates for such shares respecting restrictions upon transfer thereof necessary or advisable in the opinion of counsel to the Company to prevent further transfer which would be in violation of Section 5 the Act and applicable state securities or blue sky laws.

If in the opinion of counsel to the Company or other counsel reasonably acceptable to the Company the proposed transfer or disposition of this Warrant or the Warrant Shares described in the written notice given pursuant to this Section 7 may not be effected without registration of this Warrant or the Warrant Shares, the Company shall promptly give written notice thereof to the Holder within 10 days after the Company receives such notice, and such holder will limit its activities in respect to such as, in the opinion of such counsel, is permitted by law.

8. Covenants of the Company. The Company covenants and agrees that all shares which may be issued upon conversion of this Warrant will, upon issuance, be duly authorized and issued, fully paid, nonassessable and free from all taxes, liens and charges with respect to the issue thereof. The Company further covenants and agrees that the Company will at all times have authorized, and reserved for the purpose of issue upon exercise hereof, a sufficient number of shares of its Common Stock to provide for the exercise of this Warrant.

9. Certain Notices. The Holder shall be entitled to receive from the Company immediately upon declaration thereof and at least thirty (30) days prior to the record date for determination of shareholders entitled thereto or to vote thereon (or if no record date is set, prior to the event), written notice of any event which could require an adjustment pursuant to Section 4 hereof or of the dissolution or liquidation of the Company. All notices hereunder shall be in writing and shall be delivered personally or by telecopy (receipt confirmed) to such party (or, in the case of an entity, to an executive officer of such party) or shall be sent by a reputable express delivery service or by certified mail, postage prepaid with return receipt requested, addressed as follows:

if to Medtronic, to:

Medtronic, Inc.
Corporate Center
7000 Central Avenue N.E.
Minneapolis, MN 55432

with separate copies thereof addressed to:

Attention: General Counsel
FAX (612) 572-5459

Attention: Vice President, Corporate Development and Associate General Counsel
FAX (612) 572-5404

if to the Company to:

Endocardial Solutions, Inc.
1350 Energy Lane, Suite 110
St. Paul, MN 55108-5254
Attention: President and Chief Executive Officer
FAX (612) 644-7897

Any party may change the above-specified recipient and/or mailing address by notice to all other parties given in the manner herein prescribed. All notices shall be deemed given on the day when actually delivered as provided above (if delivered personally or by telecopy) or on the day shown on the return receipt (if delivered by mail or delivery service).

10. Registration Rights. The Holders of this Warrant and the Warrant Shares are entitled to the rights and benefits of all of the terms, provisions and conditions of that certain Registration Rights Agreement dated January 30, 1998 between Medtronic, Inc. and the Company, provided an express sharing or assignment of such rights and benefits is made to each such Holder by such Holder's transferor.

11. Miscellaneous.

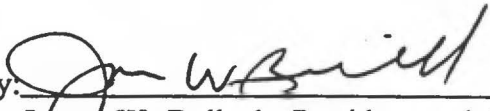
(a) No amendment, modification or waiver of any provision of this Warrant shall be effective unless the same shall be in writing and signed by the holder hereof.

(b) This Warrant shall be governed by and construed in accordance with the laws of the State of Minnesota.

(Signatures on the following page)

IN WITNESS WHEREOF, the Company has caused this Warrant to be signed by its authorized officer and dated as of the date stated above.

ENDOCARDIAL SOLUTIONS, INC.

By: 
James W. Bullock, President and Chief
Executive Officer

NOTICE OF EXERCISE OF WARRANT --To Be Executed by the Registered Holder in
Order to Exercise the Warrant

The undersigned hereby irrevocably elects to exercise the attached Warrant to purchase, for cash pursuant to Section 1 thereof, _____ shares of Common Stock issuable upon the exercise of such Warrant. The undersigned requests that certificates for such shares be issued in the name of _____. If this Warrant is not fully exercised, the undersigned requests that a new Warrant to purchase the balance of shares remaining purchasable hereunder be issued in the name of _____.

Date: _____, _____

[name of registered Holder]_____
[signature]_____
[street address]_____
[city, state, zip]_____
[tax identification number]

NOTICE OF CONVERSION OF WARRANT -- To Be Executed by the Registered Holder in
Order to Convert the Warrant on a Cashless
Basis

The undersigned hereby irrevocably elects to convert, on a cashless basis, a total of _____ shares of Common Stock otherwise purchasable upon exercise of the attached Warrant into such lesser number of shares of Common Stock as determined by Section 2 of the Warrant. The undersigned requests that certificates for such shares be issued in the name of _____. If this Warrant is not fully converted, the undersigned requests that a new Warrant to purchase the balance of shares remaining purchasable hereunder be issued in the name of _____.

Date: _____, _____

[name of registered Holder]

[signature]

[street address]

[city, state, zip]

[tax identification number]

Exhibit D

Registration Rights Agreement

2089531-4
(18s@j04!.doc)

REGISTRATION RIGHTS AGREEMENT

This REGISTRATION RIGHTS AGREEMENT is made and entered into as of January 30, 1998 by and between ENDOCARDIAL SOLUTIONS, INC. (the "Company"), a Delaware corporation, and MEDTRONIC ASSET MANAGEMENT, INC. ("Medtronic"), a Minnesota corporation.

RECITALS

WHEREAS, in connection with the License Agreement dated on or about the date hereof between the Company and Medtronic, Inc. (the "License Agreement"), Medtronic is receiving an "Initial Warrant" and will receive an "Additional Warrant" (as such terms are defined in the License Agreement) from the Company; and

WHEREAS, in connection therewith, the parties desire to provide certain registration rights and benefits with respect to the Initial Warrant and the Additional Warrant (collectively, the "Warrants") and the shares issuable thereunder.

AGREEMENT

NOW, THEREFORE, in consideration of the respective covenants and agreements contained herein, and for other valuable consideration, the receipt and adequacy of which is hereby acknowledged, the parties hereto agree as follows:

ARTICLE I DEFINITIONS

1.1 SPECIFIC DEFINITIONS. As used in this Agreement, the following terms shall have the meanings set forth or as referenced below:

"ADDITIONAL WARRANT" has the meaning assigned to such term in the License Agreement.

"AGREEMENT" means this Agreement.

"COMMON STOCK" means the Company's Common Stock, \$.01 par value per share.

"EFFECTIVE DATE" means the date of the execution of the License Agreement by the parties thereto.

"EXCHANGE ACT" means the Securities Exchange Act of 1934, as amended, and the rules and regulations promulgated thereunder.

"FORM S-3" means such form under the Securities Act in effect on the date hereof or any successor registration form under the Securities Act subsequently adopted by the SEC which permits inclusion or incorporation of substantial information by reference to other documents filed by the Company with the SEC.

"HOLDER" means Medtronic or any person owning of record Registrable Securities that have not been sold to the public or any assignee of record of such Registrable Securities in accordance with Article II hereof.

"INITIAL WARRANT" has the meaning assigned to such term in the License Agreement.

"INITIATING HOLDERS" means Holders of outstanding Warrants and/or outstanding Registrable Securities at the time the request for registration pursuant hereto, which amount of such Warrants and Registrable Securities so held by such Holders represents more than fifty percent (50%) of the total of: (i) then outstanding Registrable Securities and (ii) Registrable Securities issuable upon then outstanding Warrants.

"INVESTMENT AGREEMENT" means that certain Investment Agreement, dated April 26, 1996, between the Company and Medtronic Asset Management, Inc.

"INVESTORS' RIGHTS AGREEMENT" means that certain Amended and Restated Investors' Rights Agreement, dated as of January 31, 1995, as amended April 26, 1996, between the Company and the purchasers of the Company's Series A Preferred Stock and Series B Preferred Stock identified on the signature pages thereto.

"LICENSE AGREEMENT" has the meaning assigned to such term in the recitals.

"REGISTER," "REGISTER," and "REGISTRATION" means a registration effected by preparing and filing a registration statement in compliance with the Securities Act, and the declaration or ordering of effectiveness of such registration statement.

"REGISTRABLE SECURITIES" means (i) the Shares and (ii) any shares of Common Stock of the Company issued (or issuable upon the conversion or exercise of any warrant, right or other security which is issued) as a dividend or other distribution with respect to, or in exchange for or in replacement of, the Shares. Notwithstanding the foregoing, Registrable Securities shall not include any securities sold by a person to the public either pursuant to a registration statement or Rule 144 under the Securities Act or sold in a private transaction in which the transferrer's rights under Article II of this Agreement are not assigned.

"REGISTRATION EXPENSES" means all expenses incurred by the Company in complying with Article II hereof, including, without limitation, all registration and filing fees,

printing expenses, fees and disbursements of counsel and accountants for the Company, reasonable fees and disbursements not to exceed Ten Thousand Dollars (\$10,000) of a single special counsel for the Holders of Registrable Securities, blue sky fees and expenses (but excluding the compensation of regular employees of the Company which shall be paid in any event by the Company).

“SEC” has the meaning assigned to such term in the recitals of this Agreement.

“SECURITIES ACT” has the meaning assigned to such term in the recitals of this Agreement.

“SELLING EXPENSES” means all underwriting discounts and commissions applicable to a sale of Registrable Securities.

“SHARES” means shares of Common Stock issued or issuable pursuant to the Initial Warrant and, after the Additional Warrant becomes exercisable, also means Common Stock issued or issuable pursuant to the Additional Warrant.

“STOCK PURCHASE AGREEMENT” means that certain Stock Purchase Agreement, dated March 18, 1997, between the Company and Medtronic Asset Management, Inc.

“WARRANTS” means the Initial Warrant and the Additional Warrant.

1.2 DEFINITIONAL PROVISIONS.

(a) The words “hereof,” “herein,” and “hereunder” and words of similar import, when used in this Agreement, shall refer to this Agreement as a whole and not to any particular provisions of this Agreement.

(b) Terms defined in the singular shall have a comparable meaning when used in the plural, and vice-versa.

(c) References to an “Article” or a “Section” are, unless otherwise specified, to one of the Articles or Sections of this Agreement.

(d) The term “person” includes any individual, partnership, joint venture, corporation, trust, unincorporated organization or government or any department or agency thereof.

ARTICLE II REGISTRATION RIGHTS

2.1 DEMAND REGISTRATIONS.

(a) Subject to the conditions of this Section 2.1, if the Company shall receive at any time after the date hereof, a written request from Initiating Holders that the Company file a registration statement under the Securities Act covering the registration of Registrable Securities having an aggregate offering price to the public in excess of \$2,000,000, then the Company shall, within thirty (30) days of the receipt thereof, give written notice of such request to all Holders, and subject to the limitations of Section 2.1(b), effect, as soon as practicable, the registration under the Securities Act of all Registrable Securities that the Holders request to be registered.

(b) If the Initiating Holders intend to distribute the Registrable Securities covered by their request by means of an underwriting, they shall so advise the Company as a part of their request made pursuant to this Section 2.1 and the Company shall include such information in the written notice referred to in Section 2.1(a). In such event, the right of any Holder to include his Registrable Securities in such registration shall be conditioned upon such Holder's participation in such underwriting and the inclusion of such Holder's Registrable Securities in the underwriting (unless otherwise mutually agreed by a majority in interest of the Initiating Holders and such Holder) to the extent provided herein. All Holders proposing to distribute their securities through such underwriting shall enter into an underwriting agreement in customary form with the underwriter or underwriters selected for such underwriting by a majority in interest of the Initiating Holders (which underwriter or underwriters shall be reasonably acceptable to the Company). Notwithstanding any other provision of this Section 2.1, if the underwriter advises the Company in writing that marketing factors require a limitation of the number of securities to be underwritten (including Registrable Securities) then the Company shall so advise all Holders of Registrable Securities which would otherwise be underwritten pursuant hereto, and the number of shares that may be included in the underwriting shall be allocated to the Holders of such Registrable Securities on a pro rata basis based on the number of Registrable Securities held by all Holders participating in the related registration (including the Initiating Holders). Any Registrable Securities excluded or withdrawn from such underwriting shall be withdrawn from the registration.

(c) The Company shall not be obligated to effect more than two (2) registrations pursuant to this Section 2.1 that do not include Registrable Securities from the Additional Warrant and shall not be obligated to effect more than two (2) registrations pursuant to this Section 2.1 that include Registrable Securities from the Additional Warrant.

2.2 PIGGYBACK REGISTRATIONS.

(a) The Company shall notify all Holders of Registrable Securities in writing at least thirty (30) days prior to the filing of any registration statement under the Securities

Act for purposes of a public offering of securities of the Company (including, but not limited to, registration statements relating to secondary offerings of securities of the Company, but excluding registration statements relating to employee benefit plans and corporate reorganizations) and will afford each such Holder an opportunity to include in such registration statement all or part of such Registrable Securities of such Holder. Each Holder desiring to include in any such registration statement all or any part of such Holder's Registrable Securities shall, within twenty (20) days after receipt of the above-described notice from the Company, so notify the Company in writing. Such notice shall state the intended method of disposition of the Registrable Securities by such Holder. If a Holder of Registrable Securities decides not to include all of such Holder's Registrable Securities in any registration statement thereafter filed by the Company, such Holder shall nevertheless continue to have the right to include any Registrable Securities in any subsequent registration statement or registration statements as may be filed by the Company with respect to offerings of its securities, all upon the terms and conditions set forth herein.

(b) If the registration statement under which the Company gives notice under this Section 2.2 is for an underwritten offering, the Company shall so advise the Holders of Registrable Securities. In such event, the right of any such Holder to be included in a registration pursuant to this Section 2.2 shall be conditioned upon such Holder's participation in such underwriting and the inclusion of such Holder's Registrable Securities in the underwriting to the extent provided herein. All Holders proposing to distribute their Registrable Securities through such underwriting shall enter into an underwriting agreement in customary form with the underwriter or underwriters selected for such underwriting. Notwithstanding any other provisions of this Agreement, if the underwriter determines in good faith that marketing factors require a limitation of the number of shares to be underwritten, the number of shares that may be included in the underwriting shall be allocated, first, to the Company; and second, to the Holders and any other selling shareholders on a pro rata basis based on the total number of securities held by such Holders and other selling shareholders.

2.3 FORM S-3 REGISTRATIONS. In case the Company shall receive from any Holder or Holders of Registrable Securities a written request or requests that the Company effect the registration under the Securities Act, and any related qualification or compliance with respect to, all or a part of the Registrable Securities owned by such Holder or Holders by the filing with the SEC of a registration statement on Form S-3 covering such Registrable Securities, the Company will:

(a) promptly give written notice of the proposed registration, and any related qualification or compliance, to all other Holders of Registrable Securities; and

(b) as soon as practicable, effect such registration and all such qualifications and compliances as may be so requested and as would permit or facilitate the sale and distribution of all or such portion of such Holder's or Holders' Registrable Securities as are specified in such request, together with all or such portion of the Registrable

Securities of any other Holder or Holders joining in such request as are specified in a written request given within fifteen (15) days after receipt of such written notice from the Company; provided, however, that the Company shall not be obligated to effect any such registration, qualification or compliance pursuant to this Section 2.3: (i) if Form S-3 under the Securities Act is not available for such offering by the Holders, (ii) if the Holders, together with the holders of any other securities of the Company entitled to inclusion in such registration, propose to sell Registrable Securities and such other securities (if any) at an aggregate price to the public of less than \$500,000, (iii) if the Company shall furnish to the Holders a certificate signed by the Chief Executive Officer stating that in the good faith judgment of the Board, it would be seriously detrimental to the Company and its shareholders for such registration to be effected at such time, in which event the Company shall have the right to defer the filing of the Form S-3 registration statement for a period of not more than one hundred twenty (120) days after receipt of the request of the Holder or Holders under this Section 2.3, (iv) if the request for registration does not include Registrable Securities from the Additional Warrant and the Company has already effected two (2) registrations for the Holders pursuant to this Section 2.3 that did not include Registrable Securities from the Additional Warrant, (v) if the request for registration includes Registrable Securities from the Additional Warrant and the Company has already effected two (2) registrations for the Holders pursuant to this Section 2.3 that included Registrable Securities from the Additional Warrant, or (vi) in any particular jurisdiction in which the Company would be required to qualify to do business or to execute a general consent to service of process in effecting such registration, qualification or compliance.

(c) Subject to the foregoing, the Company shall file a Form S-3 registration statement covering the Registrable Securities and other securities so requested to be registered as soon as practicable after receipt of the request or requests of the Holders.

2.4 EXPENSES OF REGISTRATION. All Registration Expenses incurred in connection with any registration, qualification or compliance pursuant to Section 2.1 or any registration under Section 2.2 or Section 2.3 shall be borne by the Company. All Selling Expenses incurred in connection with any such registration shall be borne by the holders of the securities so registered pro rata on the basis of the number of shares so registered. The Company shall not, however, be required to pay for expenses of any registration proceeding begun pursuant to Section 2.1 or Section 2.3, the request of which has been subsequently withdrawn by the Initiating Holders unless (a) the withdrawal is based upon material adverse information concerning the Company of which the Company was aware but the Initiating Holders were not aware at the time of such request or (b) the Holders of a majority of Registrable Securities agree to forfeit their right to one requested registration pursuant to Section 2.1 or Section 2.3 (in which event such right shall be forfeited by all Holders), provided, however, no right to a requested registration to include Registrable Securities from the Additional Warrant pursuant to Section 2.1 or Section 2.3 shall be so forfeited unless agreed to by the Holders of a majority of the Registrable Securities from the Additional Warrant. If the Holders are required to pay the Registration Expenses, such expenses shall be borne by the holders of securities (including Registrable Securities) requesting such registration in proportion to the number of shares for

which registration was requested. If the Company is required to pay the Registration Expenses of a withdrawn offering pursuant to this Section 2.4, then the Holders shall not forfeit their rights pursuant to Section 2.1 or Section 2.3 to a demand registration.

2.5 OBLIGATIONS OF THE COMPANY. Whenever required to effect the registration of any Registrable Securities, the Company shall, as expeditiously as reasonably possible:

(a) Prepare and file with the SEC a registration statement on Form S-3 (or such other Form as is then available to the Company in connection with such registration) with respect to such Registrable Securities and use its best efforts to cause such registration statement to become effective, and, upon the request of the Holders of a majority of the Registrable Securities registered thereunder, keep such registration statement effective for up to one year (two years in the case of a registration on Form S-3).

(b) Prepare and file with the SEC such amendments and supplements to such registration statement and the prospectus used in connection with such registration statement as may be necessary to comply with the provisions of the Securities Act with respect to the disposition of all securities covered by such registration statement.

(c) Furnish to the Holders such number of copies of a prospectus, including a preliminary prospectus, in conformity with the requirements of the Securities Act, and such other documents as they may reasonably request in order to facilitate the disposition of Registrable Securities owned by them.

(d) Use its best efforts to register and qualify the securities covered by such registration statement under such other securities or Blue Sky laws of such jurisdictions as shall be reasonably requested by the Holders, provided that the Company shall not be required in connection therewith or as a condition thereto to qualify to do business or to file a general consent to service of process in any such states or jurisdictions.

(e) In the event of any underwritten public offering, enter into and perform its obligations under an underwriting agreement, in usual and customary form, with the managing underwriter(s) of such offering. Each Holder participating in such underwriting shall also enter into and perform its obligations under such an agreement.

(f) Notify each Holder of Registrable Securities covered by such registration statement at any time when a prospectus relating thereto is required to be delivered under the Securities Act of the happening of any event as a result of which the prospectus included in such registration statement, as then in effect, includes an untrue statement of a material fact or omits to state a material fact required to be stated therein or necessary to make the statements therein not misleading in the light of the circumstances then existing.

(g) Furnish, at the request of a majority of the Holders participating in the registration, on the date that such Registrable Securities are delivered to the underwriters for sale, if such securities are being sold through underwriters, or, if such securities are

not being sold through underwriters, on the date that the registration statement with respect to such securities becomes effective, (i) an opinion, dated as of such date, of the counsel representing the Company for the purposes of such registration, in form and substance as is customarily given to underwriters in an underwritten public offering and reasonably satisfactory to a majority in interest of the Holders requesting registration, addressed to the underwriters, if any, and to the Holders requesting registration of Registrable Securities and (ii) a letter dated as of such date, from the independent certified public accountants of the Company, in form and substance as is customarily given by independent certified public accountants to underwriters in an underwritten public offering and reasonably satisfactory to a majority in interest of the Holders requesting registration, addressed to the underwriters, if any, and to the Holders requesting registration of Registrable Securities.

2.6 TERMINATION OF REGISTRATION RIGHTS. All registration rights granted under this Article VI shall terminate and be of no further force and effect five (5) years after the exercise in full or expiration of the Additional Warrant.

2.7 DELAY OF REGISTRATION. No Holder shall have any right to obtain or seek an injunction restraining or otherwise delaying any such registration as the result of any controversy that might arise with respect to the interpretation or implementation of this Article II.

2.8 INDEMNIFICATION. In the event any Registrable Securities are included in a registration statement under Sections 2.1, 2.2 or 2.3:

(a) To the extent permitted by law, the Company will indemnify and hold harmless each Holder, the partners, officers and directors of each Holder and each person, if any, who controls such Holder within the meaning of the Securities Act or the Exchange Act, and each underwriter, if any, and each person, if any, who controls any underwriter within the meaning of the Securities Act or the Exchange Act, against any losses, claims, damages, or liabilities (joint or several) to which they may become subject under the Securities Act, the Exchange Act or other federal or state law, insofar as such losses, claims, damages or liabilities (or actions in respect thereof) arise out of or are based upon any of the following statements, omissions or violations (collectively a "Violation") by the Company: (i) any untrue statement or alleged untrue statement of a material fact contained in such registration statement, including any preliminary prospectus or final prospectus contained therein or any amendments or supplements thereto, (ii) the omission or alleged omission to state therein a material fact required to be stated therein, or necessary to make the statements therein not misleading, or (iii) any violation or alleged violation by the Company of the Securities Act, the Exchange Act, any state securities law or any rule or regulation promulgated under the Securities Act, the Exchange Act or any state securities law in connection with the offering covered by such registration statement; and the Company will reimburse each such Holder, partner, officer, director, underwriter and controlling person for any legal or other expenses reasonably incurred by them in connection with investigating or defending any such loss, claim, damage, liability or action; provided however, that the indemnity agreement

contained in this Section 2.8(a) shall not apply to amounts paid in settlement of any such loss, claim, damage, liability or action if such settlement is effected without the consent of the Company (which consent shall not be unreasonably withheld), nor shall the Company be liable in any such case for any such loss, claim, damage, liability or action to the extent that it arises out of or is based upon a Violation which occurs in reliance upon and in conformity with written information furnished expressly for use in connection with such registration by such Holder, partner, officer, director, or controlling person of such Holder.

(b) To the extent permitted by law, each selling Holder will indemnify and hold harmless the Company, each of its directors, each of its officers, each person, if any, who controls the Company within the meaning of the Securities Act, and each underwriter, if any, and each person, if any, who controls any underwriter within the meaning of the Securities Act or the Exchange Act, and any other Holder selling securities under such registration statement or any of such other Holder's partners, directors or officers or any person who controls such Holder, against any losses, claims, damages or liabilities (joint or several) to which the Company or any such director, officer, underwriter, controlling person, or other such Holder, or partner, director, officer or controlling person of such other Holder may become subject under the Securities Act, the Exchange Act or other federal or state law, insofar as such losses, claims, damages or liabilities (or actions in respect thereto) arise out of or are based upon any Violation, in each case to the extent (and only to the extent) that such Violation occurs in reliance upon and in conformity with written information furnished by such Holder and stated to be specifically for use in connection with such registration; and each such Holder will reimburse any legal or other expenses reasonably incurred by the Company or any such director, officer, underwriter, controlling person, or other Holder, or partner, officer, director or controlling person of such other Holder in connection with investigating or defending any such loss, claim, damage, liability or action if it is judicially determined that there was such a Violation; provided, however, that the indemnity agreement contained in this Section 2.8(b) shall not apply to amounts paid in settlement of any such loss, claim, damage, liability or action if such settlement is effected without the consent of the Holder, which consent shall not be unreasonably withheld; provided further that in no event shall any indemnity under this Section 2.8(b) exceed the gross proceeds from the offering received by such Holder unless the Violation is the result of fraud on the part of such Holder.

(c) Promptly after receipt by an indemnified party under this Section 2.8 of notice of the commencement of any action (including any governmental action), such indemnified party will, if a claim in respect thereof is to be made against any indemnifying party under this Section 2.8, deliver to the indemnifying party a written notice of the commencement thereof and the indemnifying party shall have the right to participate in, and, to the extent the indemnifying party so desires, jointly with any other indemnifying party similarly noticed, to assume the defense thereof with counsel mutually satisfactory to the parties; provided, however, that an indemnified party shall have the right to retain its own counsel, with the fees and expenses to be paid by the indemnifying party provided however, that if there is more than one indemnified party,

the indemnifying party shall pay for the fees and expenses of one counsel for any and all indemnified parties to be mutually agreed upon by such indemnified parties, if representation of such indemnified party by the counsel retained by the indemnifying party would be inappropriate due to actual or potential differing interests between such indemnified party and any other party represented by such counsel in such proceeding. The failure to deliver written notice to the indemnifying party within a reasonable time of the commencement of any such action, if materially prejudicial to its ability to defend such action, shall relieve such indemnifying party of any liability to the indemnified party under this Section 2.8, but the omission so to deliver written notice to the indemnifying party will not relieve it of any liability that it may have to any indemnified party otherwise than under this Section 2.8.

(d) If the indemnification provided for in this Section 2.8 is held by a court of competent jurisdiction to be unavailable to an indemnified party with respect to any losses, claims, damages or liabilities referred to herein, the indemnifying party, in lieu of indemnifying such indemnified party thereunder, shall to the extent permitted by applicable law contribute to the amount paid or payable by such indemnified party as a result of such loss, claim, damage or liability in such proportion as is appropriate to reflect the relative fault of the indemnifying party on the one hand and of the indemnified party on the other in connection with the Violation(s) that resulted in such loss, claim, damage or liability, as well as any other relevant equitable considerations. The relative fault of the indemnifying party and of the indemnified party shall be determined by a court of law by reference to, among other things, whether the untrue or alleged untrue statement of a material fact or the omission to state a material fact relates to information supplied by the indemnifying party or by the indemnified party and the parties' relative intent, knowledge, access to information and opportunity to correct or prevent such statement or omission.

(e) The foregoing indemnity agreements of the Company and Holders are subject to the condition that, insofar as they relate to any Violation made in a preliminary prospectus but eliminated or remedied in the amended prospectus on file with the SEC at the time the registration statement in question becomes effective or the final prospectus filed with the SEC pursuant to SEC Rule 424(b), such indemnity agreement shall not inure to the benefit of any person if a copy of such final prospectus was furnished to the indemnified party and was not furnished to the person asserting the loss, liability, claim or damage at or prior to the time such action is required by the Securities Act.

(f) The obligations of the Company and Holders under this Section 6.9 shall survive the completion of any offering of Registrable Securities in a registration statement, and otherwise.

2.9 ASSIGNMENT OF REGISTRATION RIGHTS. The rights to cause the Company to register Registrable Securities pursuant to this Article II may be assigned by a Holder to a transferee or assignee of Registrable Securities or a portion of the Warrants; provided, however, that no such transferee or assignee shall be entitled to registration rights under this Article II

hereof unless it acquires Registrable Securities, Warrants, or a combination thereof, that represent at least fifty thousand (50,000) shares of Registrable Securities (as adjusted for stock splits and combinations) and the Company shall, within twenty (20) days after such transfer, be furnished with written notice of the name and address of such transferee or assignee and the securities with respect to which such registration rights are being assigned; provided, however, that a Holder's failure to provide such notice to the Company shall not in any way impair a Holder's right to make an assignment under this Section 2.9, but until such notice is provided the Company may continue to treat the original Holder (and not the Holder's assignee) as the Holder of the registration rights. Notwithstanding the foregoing, rights to cause the Company to register securities may be assigned to any person or entity who is a subsidiary, parent, general partner or limited partner of a Holder regardless of the number of securities transferred to such person or entity.

2.10 AMENDMENT OF REGISTRATION RIGHTS. Any provision of this Article II may be amended and the observance thereof may be waived (either generally or in a particular instance and either retroactively or prospectively), only with the written consent of the Company and the Holders of Registrable Securities and/or Warrants representing at least seventy percent (70%) of the total of: (i) the then Registrable Securities and (ii) if the Additional Warrant has not yet become exercisable, the securities that would become Registrable Securities after the Additional Warrant becomes exercisable. Any amendment or waiver effected in accordance with this Section 2.10 shall be binding upon each Holder and the Company. By acceptance of any benefits under this Article II, Holders of Registrable Securities hereby agree to be bound by the provisions hereunder.

2.11 LIMITATION ON SUBSEQUENT REGISTRATION RIGHTS. From and after the date of this Agreement, the Company shall not, without the prior written consent of the Holders of at least a majority of the total of (i) the then Registrable Securities and (ii) if the Additional Warrant has not yet become exercisable, the securities that would become Registrable Securities after the Additional Warrant becomes exercisable, enter into any agreement with any person or persons providing for the granting to such holder of registration rights *pari passu* or senior to those granted to Holders pursuant to this Article II, or of registration rights which might cause a reduction in the number of shares includable by the Holders in any offering pursuant to Section 2.1 or in any offering subject to Section 2.2.

2.12 REGISTRATION RIGHTS SEPARATE FROM OTHER REGISTRATION RIGHTS. The registration rights granted to any Holder hereunder shall be deemed to be separate and distinct from any other registration rights (the "Other Registration Rights") granted by the Company to any such Holders or any other holder of the Company's securities, including without limitation, registration rights granted by the Company to holders of its securities pursuant to the Investment Agreement, the Investors' Rights Agreement, or the Stock Purchase Agreement. In addition, any registration of Registrable Securities pursuant to the rights granted hereunder shall not affect the rights of any Holder or any other person under the Other Registration Rights, and any registration of the Company's securities under the Other Registration Rights shall not affect the rights of any Holder of Registrable Securities hereunder.

ARTICLE III
OTHER PROVISIONS

3.1 COMPLETE AGREEMENT. This Agreement constitutes the entire agreement between the parties hereto with respect to the subject matter hereof.

3.2 WAIVER, DISCHARGE, AMENDMENT, ETC. The failure of any party hereto to enforce at any time any of the provisions of this Agreement shall not, absent an express written waiver signed by the party making such waiver specifying the provision being waived, be construed to be a waiver of any such provision, nor in any way to affect the validity of this Agreement or any part thereof or the right of the party thereafter to enforce each and every such provision. No waiver of any breach of this Agreement shall be held to be a waiver of any other or subsequent breach.

3.3 NOTICES. All notices or other communications to a party required or permitted hereunder shall be in writing and shall be delivered personally or by telecopy (receipt confirmed) to such party (or, in the case of an entity, to an executive officer of such party) or shall be sent by a reputable express delivery service or by certified mail, postage prepaid with return receipt requested, addressed as follows:

if to Medtronic to:

Medtronic, Inc.
Corporate Center
7000 Central Avenue N.E.
Minneapolis, Minnesota 55432

and with separate copies thereof addressed to:

Attention: General Counsel
Fax: (612) 572-5459

and

Attention: Vice President, Corporate Development
and Associate General Counsel
FAX (612) 572-5404

if to another Holder, at such Holder's address as such Holder shall have specified to the Company in writing;

if to the Company to:

Endocardial Solutions, Inc.
1350 Energy Lane, Suite 110
St. Paul, Minnesota 55108-5254
Attention: James W. Bullock,
President and Chief Executive Officer
FAX (612) 644-7897

Any party may change the above-specified recipient and/or mailing address by notice to all other parties given in the manner herein prescribed. All notices shall be deemed given on the day when actually delivered as provided above (if delivered personally or by telecopy) or on the day shown on the return receipt (if delivered by mail or delivery service).

3.4 GOVERNING LAW. This Agreement shall be governed by and interpreted in accordance with the laws of the State of Minnesota, including all matters of construction, validity, performance and enforcement, without giving effect to principles of conflict of laws.

3.5 TITLES AND HEADINGS; CONSTRUCTION. The titles and headings to the Articles and Sections herein are inserted for the convenience of reference only and are not intended to be a part of or to affect the meaning or interpretation of this Agreement. This Agreement shall be construed without regard to any presumption or other rule requiring construction hereof against the party causing this Agreement to be drafted.

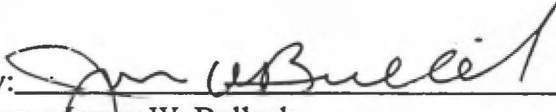
3.6 BENEFIT. Nothing in this Agreement, expressed or implied, is intended to confer on any person other than the parties hereto or their respective successors or assigns, any rights, remedies, obligations or liabilities under or by reason of this Agreement.

3.7 COUNTERPARTS. This Agreement may be executed in any number of counterparts, each of which shall be deemed as original and all of which together shall constitute one instrument, and may be delivered in person or by facsimile transmission.

(Signatures on the next page)

IN WITNESS WHEREOF, each of the parties has caused this Agreement to be executed as of the date first written above.

ENDOCARDIAL SOLUTIONS, INC.

By: 
Name: James W. Bullock
Title: President and Chief
Executive Officer

MEDTRONIC ASSET MANAGEMENT, INC.

By: _____
Name: _____
Title: _____

IN WITNESS WHEREOF, each of the parties has caused this Agreement to be executed
as of the date first written above.

ENDOCARDIAL SOLUTIONS, INC.

By: _____

Name: James W. Bullock

Title: President and Chief
Executive Officer

MEDTRONIC ASSET MANAGEMENT, INC.

By: Michael D. Ellwein

Name: MICHAEL D. ELLWEIN

Title: VICE PRESIDENT