ARRHYTHMIA RESEARCH TECHNOLOGY INC /DE/
Form S-8
May 06, 2010

As filed with the Securities and Exchange Commission on May 6, 2010 Registration No. 333-____

UNITED STATES SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, D.C. 20549

FORM S-8

REGISTRATION STATEMENT UNDER THE SECURITIES ACT OF 1933

ARRHYTHMIA RESEARCH TECHNOLOGY, INC.
(Exact name of registrant as specified in its charter)

Delaware	72-0925679
(State or other jurisdiction of incorporation or organization)	(I.R.S. Employer Identification Number)

25 Sawyer Passway, Fitchburg, MA 01420; (978) 345-5000
(Address, including zip code, and telephone number, including area code, of registrant's principal executive offices)

ARRHYTHMIA RESEARCH TECHNOLOGY, INC. 2010 EQUITY INCENTIVE PLAN
(Full Title of the Plan)

David A. Garrison
Executive Vice President and Chief Financial Officer
Arrhythmia Research Technology, Inc.
25 Sawyer Passway
Fitchburg, MA 01420
(Name and address of Agent for Service)

(978) 345-5000
(Telephone number, including area code, of agent for service)

Copies to:

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Ellenoff Grossman & Schole LLP
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Washington, DC 20036
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Indicate by check mark whether the registrant is a large accelerated filer, an accelerated file, a non-accelerated filer, or a smaller reporting company. See the definitions of "large accelerated filer," "accelerated filer" and "smaller reporting company" in Rule 12b-2 of the Exchange Act. (Check one):

[ ] Large accelerated filer

[ ] Accelerated filer

[ ] Non-accelerated filer (Do not check if a smaller reporting company)

[X] Smaller reporting company

CALCULATION OF REGISTRATION FEE

Title Of Securities To Be Registered	Amount To Be Registered	Proposed Maximum Offering Price Per Share	Proposed Maximum Aggregate Offering Price	Amount Of Registration Fee
Common Stock, $.01 par value	1500,000 shares (1)	$ 6.49 (2)	$ 3,245,000 (2)	$231.37
Common Stock, $.01 par value	1500,000 shares (3)	(3)	(3)	(4)
Total				$125.87 (5)

(1) Pursuant to Rule 416 under the Securities Act of 1933, as amended, an indeterminate amount of additional shares of common stock, which may become issuable pursuant to the anti-dilution provisions of the 2010 Equity Incentive Plan (the "Plan") are also being registered hereunder. The shares being registered consist of the following shares which may be issued and reoffered and resold from time to time under the Plan: (a) 400,000 shares plus (b) 100,000 shares registered on Form S-8 (File No. 333-130678) which registration statement is incorporated herein by reference. No shares have been issued under the Plan as of the date hereof.

(2) Estimated solely for the purpose of calculating the registration fee, pursuant to Rule 457(c) and (h)(1) under the Securities Act of 1933, as amended. The price per share and aggregate offering price are based on the average of the high and low prices of Registrant's Common Stock as reported on the NYSE Amex Exchange on May 4, 2010.

(3) Represents the same shares described in the line above, which may be resold by the holder.

(4) Pursuant to Rule 457(h)(3), no additional fee is payable since the Shares, which may be offered for resale, are the same shares being registered hereby upon their initial issuance pursuant to the Plan.

(5) The registration fee includes $105.50 previously paid on Registration No. 333-130678.

EXPLANATORY NOTE

This Registration Statement registers 500,000 shares of common stock of Arrhythmia Research Technology, Inc. (the "Company") to be offered pursuant to the Company's 2010 Equity Incentive Plan (the "2010 Plan"). No shares have been issued under the 2010 Plan as of the date hereof.

The materials which follow Part I, up to but not including the page beginning Part II of this Registration Statement, constitutes a reoffer prospectus, prepared in accordance with the requirements of Part I of Form S-3, in accordance with General Instruction C of Form S-8. The reoffer prospectus may be utilized for the reoffer and resale of up to 500,000 shares of common stock to the extent acquired by certain affiliates of the Company pursuant to the 2010 Plan. The amount of securities to be offered or resold by means of the reoffer prospectus by the designated selling securityholders may not exceed, during any three month period, the amount specified in Rule 144(e).

PART I

ITEM 1. PLAN INFORMATION

The Company will send or give document(s) containing the information specified in Part I to participants as specified by Rule 428(b)(1). These documents are not required to be filed as part of this registration statement.

ITEM 2. REGISTRANT INFORMATION AND EMPLOYEE PLAN ANNUAL INFORMATION

Upon written or oral request by a participant in the 2010 Plan, the Company will provide any of the documents incorporated by reference into the Section 10(a) prospectus, without charge. Any document required to be delivered to the participants pursuant to Rule 428(b) will also be delivered without charge.

PROSPECTUS

ARRHYTHMIA RESEARCH TECHNOLOGY, INC.

500,000 Shares of Common Stock, Par Value $0.01 Per Share

Issuable Pursuant to the 2010 Equity Incentive Plan

This prospectus covers up to 500,000 shares (the "Shares") of common stock, par value $.01 par share (the "Common Stock"), of Arrhythmia Research Technology, Inc., a Delaware corporation (the "Company"). Such Shares have been or may be acquired by certain persons who may be deemed to be affiliates of the Company, including employees, officers, directors and consultants to the Company. Such persons are referred to herein as the selling securityholders under the Arrhythmia Research Technology, Inc. 2010 Equity Incentive Plan of the Company (the "2010 Plan"). Securities issued under the 2010 Plan to affiliates will be deemed "control securities" under Rule 144. In connection with such resales or reoffers for sale, certain employees, officers, directors of the Company and the brokers through whom such Shares may be sold may be deemed to be "underwriters" as that term is defined in Section 2(11) of the Securities Act of 1933, as amended (the "Securities Act"). See "The Offering."

The Company's Common Stock is currently traded on the NYSE Amex Exchange, or NYSE Amex, under the symbol "HRT." On May 4, 2010, the closing sale price of the Common Stock was $ 6.98.

The Shares may be offered by the selling securityholders from time to time through or to brokers on the NYSE AMEX, in the over-the-counter market or otherwise at prices acceptable to the selling securityholders. The Company will not receive any of the proceeds from the sale of the Shares pursuant to this prospectus. All costs incurred in connection with the registration of the Shares are being borne by the Company. See "The Offering."

AN INVESTMENT IN THESE SECURITIES INVOLVES A HIGH DEGREE OF RISK.
SEE RISK FACTORS BEGINNING ON PAGE 10.

Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities or passed upon the adequacy or accuracy of the prospectus. Any representation to the contrary is a criminal offense.

The date of this prospectus is May 6, 2010.

AVAILABLE INFORMATION

The Company is subject to the informational requirements of the Securities Exchange Act of 1934, as amended (the "Exchange Act"), and under those requirements, it files reports and other information with the Securities and Exchange Commission (the "SEC"). The SEC maintains a website on the Internet that contains reports, proxy and information statements and other information regarding registrants, including our company, that file electronically with the SEC. The SEC's website address is www.sec.gov. In addition, the Company's Exchange Act filings may be inspected and copied at the SEC Public Reference Room located at 100 F Street, N.E., Washington, DC 20549. Copies of the material may also be obtained upon request and payment of the appropriate fee from the Public Reference Room of the SEC located at 100 F Street, N.E., Washington, DC 20549. The public may obtain information on the operation of the Public Reference Room by calling the SEC at 1-800-SEC-0330.

This prospectus is a part of a registration statement on Form S-8 (together with all amendments and exhibits referred to as the registration statement) filed by the Company with the SEC under the Securities Act of 1933, as amended (the "Securities Act"). This prospectus omits certain of the information contained in the registration statement, and reference is hereby made to the registration statement for further information with respect to the Company and the shares offered. Any statements contained herein concerning the provisions of any document filed as an exhibit to the registration statement or otherwise filed with the SEC are not necessarily complete, and in each instance reference is made to the copy of such document as filed. Each such statement is qualified in its entirety by such reference.

INCORPORATION OF CERTAIN INFORMATION BY REFERENCE

The following documents filed with the SEC are hereby incorporated by reference in this prospectus:

- Annual Report on Form 10-K for the fiscal year ended December 31, 2009, filed with the SEC on March 10, 2010;
- Current Reports on Form 8-K filed with the SEC on May 5, 2010;
- Quarterly Report on Form 10-Q filed with the SEC on May 4, 2010; and
- The description of the Company's Common Stock contained in the Company's Registration Statement on Form 8-A, filed with the SEC on February 12, 1992, including any amendment or reports filed for the purpose of updating such description.

All reports and other documents subsequently filed by the Company pursuant to Sections 13(a), 13(c), 14 and 15(d) of the Exchange Act after the date of this prospectus and prior to the termination of this offering shall be deemed to be incorporated by reference in this prospectus and to be a part hereof from the date of filing of such reports and other documents.

You may request a copy of these filings, at no cost, by writing to David A. Garrison, Executive Vice President and Chief Financial Officer, Arrhythmia Research Technology, Inc., 25 Sawyer Passway, Fitchburg, MA 01420, or by calling him at (978) 345-5000.

THE COMPANY

Company Overview

Arrhythmia Research Technology, Inc., a Delaware corporation ("ART"), is engaged in the development of medical software, which analyzes electrical impulses of the heart to detect and aid in the treatment of potentially lethal arrhythmias. ART's patented product consists of signal-averaging electrocardiographic (SAECG) software named the PREDICTOR™ series.

Our SAECG product is currently used in a National Institutes for Health ("NIH") funded investigation into "Risk Stratification in MADIT II Type Patients." At the completion of this study and assuming favorable study results, ART expects to establish additional licensing contracts with original equipment manufacturers for this product.

Sudden cardiac death afflicts over 300,000 individuals in the United States each year. Most sudden cardiac deaths are due to sustained ventricular tachycardia (abnormally rapid heartbeat) or ventricular fibrillation (very fast, completely irregular heartbeat). Ventricular late potentials may indicate a risk of life-threatening ventricular arrhythmias. The SAECG process enables late potentials to be amplified and enhanced, while eliminating undesired electrical noise, allowing for clinical interpretation of that risk. Rather than having a direct sales force, our efforts are focused on marketing ART's product through licensing to original equipment manufacturers. Although, there were no sales or licensing of the software in 2009 or 2008, ART licensed the PREDICTOR software in early 2010.

ART's wholly owned subsidiary, Micron Products, Inc., a Massachusetts corporation ("Micron"), is a manufacturer and distributor of silver plated and non-silver plated conductive resin sensors ("sensors") used in the manufacture of disposable integrated electrodes constituting a part of electrocardiographic diagnostic and monitoring instruments. Micron also acts as a distributor of metal snap fasteners ("snaps"), another component used in the manufacture of disposable electrodes. The sensors are a critical component of the signal pathway in many different types of disposable electrodes. For example, the disposable electrodes used to capture the electric impulses of the heart and enable the analysis of late potentials require sensors which provide for an accurate, low noise signal to be transmitted to the monitoring device. Micron also manufactures and sells or leases electrode assembly machines to its sensor and snap customers.

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Figure 1: Schematic of Integrated ECG Electrode

Micron is one of a few companies providing silver / silver-chloride sensors to the medical device industry. Micron's customers manufacture monitoring and transmitting electrodes which are utilized in a variety of bio-feedback and bio-stimulation applications including, among many others, electrocardiograms (ECG's), electroencephalograms (EEG's), electro-muscular stimulation (EMS), and thermo-electrical neural stimulation (TENS). Micron also produces high volume precision plastic products. These high volume products leverage the production skills for the resin sensors while providing a diversification from the dependence on a single product line.

Micron Integrated Technologies ("MIT"), a division of Micron formed in January 2006, specializes in the production of metal and plastic components and assemblies for the medical and defense industries. In 2009, in order to better leverage the high quality manufacturing of its New England Molders ("NEM") division's plastic production capacity and its Leominster Tool Division's ("LTD") metal machining capabilities, Micron began marketing these divisions as a complete source of custom manufacturing. The custom manufacturing arm of Micron, MIT provides its customers with a comprehensive portfolio of value-added manufacturing, design and engineering services, and complete product life cycle management: from concept to product development, prototyping, and volume production.

PRODUCTS

The following table sets forth for the periods specified, the revenue derived from the products of ART and its subsidiary Micron (collectively the "Company"):

	Year Ended December 31,			
	2009	%	2008	%
Sensors	$ 8,837,180	42	$ 9,398,287	42
Subassembly and metal component manufacturing	7,252,081	34	7,384,790	33
Custom injection molding	1,795,490	8	2,067,213	9
Custom manufactured metal medical devices	1,568,808	7	1,186,435	5
Injection molding tooling	629,595	3	1,478,970	7
High volume precision molded products	353,326	2	507,088	2
Snaps and snap machines	305,930	2	203,562	1
Other products	397,364	2	255,874	1
Total	$ 21,139,774	100	$ 22,482,219	100

Sensors

Micron is a manufacturer and distributor of silver-plated and non-silver plated conductive resin sensors for use in the manufacture of disposable electrodes for ECG diagnostic, monitoring and related instrumentation. The type of sensor manufactured by Micron consists of a molded plastic substrate plated with a silver / silver chloride surface, which is a highly sensitive conductor of electrical signals. Silver / silver chloride-plated disposable electrodes are utilized in coronary care units, telemetry units, and for other monitoring purposes. In addition to the traditional ECG tests, disposable electrodes incorporating Micron’s sensors are used in connection with stress tests, holter monitoring, and event recorders.

Micron also manufactures sensors and conductive plastic studs used in the manufacture of radio translucent electrodes. The radio translucent conductive plastic studs are manufactured with uniquely engineered resin to enable electrical conductivity between the sensor and the recording instrument without the use of a metal snap. The radio translucent electrodes are virtually invisible to X-rays and are preferred in some medical environments such as nuclear medicine, cardiac catheterization laboratories, and certain stress procedures. Micron also manufactures the mating conductive resin snaps, which replace traditional metal snap fasteners in the radio translucent applications.

Other custom designed sensors are manufactured for specific unique applications in the EEG, EMG or TENS markets. Recent growth in the volume of highly engineered EEG sensors reflects the increasing demand for non-invasive measuring of neurological impulses. Micron’s strength in design and low cost manufacturing enables customers to grow into unique niche medical applications and electrophysiological monitoring with custom designed sensors.

High Volume Precision Molded Products

Micron also sells high volume precision custom molded component parts. Sales in these high volume molded products diversify the Company's existing product lines while utilizing previously unused manufacturing capacity. To defray the customer's upfront tooling costs and remain competitive with global competition, some high volume customers require the financing of a customer specific tool over several years. The cost of the tool is guaranteed by the customer and repaid over time as the molded product is shipped.

Snaps and Snap Machines

Metal Snap Fasteners

Metal snap fasteners are used as an attachment and conductive connection between the disposable electrode and the lead wires of an ECG machine. Micron purchases the metal snap fasteners for resale from multiple suppliers and performs additional quality assurance tests, repackages and stocks these snap fasteners for its customers who purchase the snaps in addition to Micron's sensors.

High Speed Electrode Assembly Machine

Certain manufacturers of disposable medical electrodes use the Company's attaching machines in the assembly of sensors and snaps into disposable electrodes. Manufacturing, leasing, selling, and providing replacement parts to medical sensor and snap application machines provides Micron with a complementary product to sell to existing sensor and snap customers. As a value added service, a technician can be dispatched to troubleshoot and improve the performance of the customers' fully automated electrode assembly production lines.

Other Products and Services

Custom Injection Molding

The diversification of custom molding has increased production flexibility, and dramatically expanded the capability to produce an increased size and complexity of products. From consumable medical products to medical equipment components, the MIT division has decreased Micron's dependence on sensor production for manufacturing growth. In order to leverage the division's thermoplastic injection molding capabilities, the division has expanded into other value added services including packaging, assembly with outsourced and internally produced metal components, clean room manufacturing, and specialty coatings.

Defense industry subassembly and metal component manufacturing

The MIT division's product life cycle management program is focused on the integration of plastic and metal components into subassemblies. The value added service of in house production capabilities combined with a network of subcontracted specialty coatings, metallurgical treatments, and unique production capabilities has diversified this product line to include defense industry consumables and equipment subassemblies.

Injection Molding Tooling

The design, manufacture, and rehabilitation of injection molding tools for the customer is part of the service package provided by the MIT division. The division also provides cost savings to Micron by vertically integrating mold making and repair into the structure of Micron's sensor and custom injection molding businesses. The Company's engineers and mold designers work with customers' product development engineers to design and produce unique tooling for their products. MIT's expertise in cost effective manufacturing creates a sustainable partnership with the customers as prototyped parts move to full scale production. The design and manufacture of tooling is a leading indicator of future product revenue. The division continues to generate revenues from other customers for similar industrial applications such as metal die casting molds, investment casting wax molds, and thermoplastic injection/extrusion blow molds.

Custom Manufactured Metal Medical Devices

A climate controlled medical machining cell was built for the custom computer aided design and computer controlled metal machining of patient specific orthopedic medical device components. The manufacturing space includes a machine programming office with the latest technology in computer programming for 5-axis machining with Computer Numerical Controlled (CNC) vertical milling machines and a state of the art 5-axis machining center. These products involve complex machining of wrought and cast cobalt-chromium-molybdenum alloy as well as high molecular weight polymers into unique customized products. No two components are identical and require precision manufacturing verified by complex computer controlled automated coordinate measuring equipment that measure up to 25 points per square inch. Additional capabilities added to the cell include laser marking, passivation, automated polishing, and ultra-sonic cleaning. The space can accommodate a 50% increase in manufacturing capacity before reaching any physical constraints.

Signal-Averaging Electrocardiographic (SAECG) Products - PREDICTOR™

In early 2010, the Company successfully converted its proprietary signal-averaged electrocardiography (SAECG) software, PREDICTOR, that operates on a single hardware based electrocardiogram acquisition platform, ART 1200-EPX, to a customizable modular software product that is compatible with a variety of hardware platforms. The conversion allows PREDICTOR to be used with customer-specific electrocardiogram acquisition equipment to generate the signal-averaged ECG analysis. The software can be customized to interface with a variety of Original Equipment Manufacturer ("OEM") hardware. OEM customers can license PREDICTOR and bundle it with other

cardiac diagnostic software packages incorporated in their acquisition equipment.

PREDICTOR utilizes the unique, patented and proprietary algorithms which have been defined as the "Standard" by the joint AHA/ACC/ESC task force on Signal-Averaging Electrocardiography1. PREDICTOR is also capable of incorporating additional signal processing capabilities included in the Company's software library for clinical research. This library includes IntraSpect, a module that permits detection of ventricular late potentials in patients with Bundle Branch Block, P-wave signal averaging which helps predict patients at risk for atrial fibrillation and flutter and a Heart Rate Variability module.

PREDICTOR is currently being used in a NIH funded investigation into "Risk Stratification in MADIT II Type Patients." The primary objectives of this study are: 1. To evaluate the predictive value of a multivariate model consisting of pre-specified clinical and ECG parameters for predicting arrhythmic events in Multicenter Automatic Defibrillator Implantation Trial II ("MADIT II") type post-infarction patients; 2. To develop a multivariate risk-stratification model, based on a broader spectrum of pre-specified clinical covariates and ECG parameters, and from it a risk-scoring algorithm identifying high-risk and low-risk patient groups; this algorithm will be validated by a cross-validation study. Such an algorithm will enable an ordering of patients who may benefit most, and benefit least, from implantable cardiac defibrillator ("ICD") therapy. Results from this investigation are expected in late 2011.

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1 AHA/ACC/ESC Policy Statement: "Standards for the Analysis of Ventricular Late Potentials Using High Resolution or Signal-Averaged Electrocardiography: A Statement by a Task Force Committee of the European Society of Cardiology, the American Heart Association and the American College of Cardiology. JACC Vol. 17, No. 5, April 1991:999-1006

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GENERAL

Customers and Sales

During the year ended December 31, 2009, there were three major customers, each of which accounted for over 10% of the Company's sales and a loss of this base may have a material adverse effect on results. The three largest customers accounted for 23%, 16%, and 12% of sales in 2009 as compared to 27%, 17%, and 12% of sales for the year ended December 31, 2008.

Micron manufactures its sensors against purchase orders from electrode manufacturers. The Company is aware of approximately 20 significant manufacturers of disposable snap type, radio translucent and pre-wired electrodes worldwide. Micron sells its sensors to most of these manufacturers. Sales backlog is not material to Micron's sensor business due to the method of ordering employed by its customer base in this competitive industry. Customers generally purchase on a single purchase order basis without long-term commitments.

The majority of the MIT divisions' customers for injection molded thermoplastic products are from the medical equipment, medical device and defense industries. From single use medical or defense consumable products to equipment components, the engineered production services provide quality design and production capabilities which exceed the customers' manufacturing requirements. Certain customers require that an inventory of their products be maintained at all times to enable just in time delivery schedules. A commitment from customers is required by MIT to maintain the higher level of finished goods inventory and raw material required for their products. These agreements allow for a more flexible manufacturing schedule with longer more cost effective production cycles. MIT's primary target customer is a medical product or device, defense related contractor, manufacturer, or development company with a need for complete product life cycle management from design to full production preferably combining multiple manufacturing technologies such as plastic injection molding, metalworking, assembly, and packaging.

The following table sets forth, for the periods indicated, the approximate consolidated revenues and percentages of revenues derived from the sales of all of the Company's products in its geographic markets:

	Revenues for the Years Ended December 31,			
	2009	%	2008	%
United States	$ 12,937,615	61	$ 13,290,098	59
Canada	3,684,087	17	5,118,913	23
Europe	2,644,727	13	3,091,326	14
Pacific Rim	818,866	4	426,764	2
Other	1,054,479	5	555,118	2
Total	$ 21,139,774	100	$ 22,482,219	100

While some risks exist in foreign markets, the vast majority of the Company's customers are based in historically stable markets. To reduce the risks associated with foreign shipment and currency exchange fluctuations, the title to most of the products are transferred to the customers when shipped, and payment is required in U.S. Dollars.

To help offset the risk from fluctuations in the market price of silver, sensor customers have generally been subject to a silver surcharge or discount based on the market price of silver at the time of shipment. The Company is sensitive to the impact of recent increases in silver cost, and continues to explore options with the sensor customers to help mitigate the resulting increases in surcharges.

Marketing and Competition

Micron sells its sensors to large, sophisticated OEM manufacturers of disposable snap type and radio translucent ECG electrodes who compete internationally in the electrode market against other OEM manufacturers as well as

manufacturers of tab-type electrodes. The Company has one major domestic competitor in the sensor market along with an increasing number of minor competitors worldwide. The sensor and snap market is extremely price sensitive and barriers to entry are relatively low. The Company competes with respect to its sensor products on the basis of pricing, technical capabilities, quality of service and ability to meet customer requirements. With no import restrictions, the Company's foreign competitors with excess capacity can be expected to expand sales in the U.S. In addition, many of the major OEM customers, although not currently manufacturing silver-silver chloride sensors, have the ability to do so with modest investment.

The Company markets Micron and its MIT division as a highly specialized custom injection thermoplastic molder to new and existing customers. The Company believes it competes effectively based on its expertise in low cost manufacturing of high volume precision products. The complex medical products produced by the MIT division have expanded the existing customer base and extensively diversified the product mix. It is the Company's intention to continue these efforts to market to the expanded customer base and further diversify the product offerings. Global competition creates a highly competitive environment. To meet this challenge, the MIT division focuses its product development efforts on complex close tolerance products not readily outsourced to offshore manufacturing. The Company's recent ISO 13485:2003 registration, the international quality standard for medical devices, qualifies the Company to further expand into medical products. The Company expects to become competitive in more markets after completion of its registration as a U.S. Food and Drug Administration (FDA) manufacturing facility in 2010. The Company's International Traffic in Arms Regulation (ITAR) registration with the US State Department allows the Company to compete in defense applications restricted by export controls and the Department of Defense.

After success in early 2010, management is currently pursuing licensing arrangements of its proprietary signal-averaged electrocardiography (SAECG) software, PREDICTOR, to other Original Equipment Manufacturers for integration into existing cardio diagnostic equipment. As previously stated, the SAECG product is currently used in a NIH funded investigation into "Risk Stratification in MADIT II Type Patients".

Product Suppliers and Manufacturing

Micron manufactures its sensors at its Fitchburg, Massachusetts facility employing a proprietary non-patented multi-step process. All employees sign confidentiality agreements to protect this proprietary process. The raw materials used by Micron are plastic resins used to mold the substrates and silver-silver chloride chemical solutions for plating the molded plastic substrates. Both the resins and the chemicals involved in the silver-silver chloride process are available in adequate supply from multiple commodity sources. As insulation against unanticipated price increases, some resins and chemicals used in the production of sensors are purchased in large quantities to lower or stabilize prices.

Resins used by the MIT division are purchased for an individual customer order, with most increases in resin costs passed on to the customer as orders are acknowledged. Because the customer order determines the quantity of material required, customers may, and have, guaranteed the purchase of specific large quantities of product which allows the division to purchase raw material at a more favorable cost thereby lowering the final cost to the customer. The metal alloys are subject to the same customer order limitations, and prices are fixed as the customer guarantees an order.

Micron distributes medical grade nickel-plated brass and stainless steel snap fasteners purchased from multiple domestic and international sources. Micron buys these snaps in bulk, performs additional quality assurance tests, and stocks inventory to facilitate just-in-time shipments to its customers. This business segment has decreased significantly in revenue as price pressure has forced metal snap customers to buy direct from the manufacturer to remain competitive.

The Company's 116,000 square foot manufacturing facilities are ITAR, ISO 9001:2001 and 13485:2003 registered. Micron's injection molding machines capacity ranges from 15 to 300 tons and includes a class 10,000 clean room used for processes sensitive to environmental particulates. In addition, this facility includes a climate-controlled space for the manufacture of metal medical devices utilizing the latest in 5-axis CNC technology.

Inventory Requirements

Larger customers benefit from the Company's ability to maintain an inventory of standard sensors and snaps. This inventory policy allows for predictable and planned production resulting in cost efficiencies that help to offset price erosion in the marketplace.

Custom manufactured product is completed on an order by order basis. Finished goods inventory is product made in advance of an acknowledged sales order, part of an annual blanket order quantity, or for a specific safety stock requested by the customer.

Research and Development

ART's research and development efforts focus primarily on maintaining the software library in the SAECG product lines in a compatible platform. The Company continues to provide technical support to the NIH's research project utilizing ART's software. Included in this expense is development work to verify the integrity of the analytical algorithms, and improve the stability and ease of customization of the software to be compatible with various hardware and software platforms. For the fiscal years ended December 31, 2009 and 2008, ART had research and development expenses of approximately $21,527 and $69,779, respectively.

In 2009 and 2008, Micron's research and development efforts resulted in $219,967 and $250,261 of expense. These efforts include the development of a unique process to eliminate certain hazardous materials from the manufacturing processes. The 2008 expense included $52,000 for equipment tested in a process improvement project for the sensor product line as well as the impairment of equipment used for final product testing. .

Patents and Proprietary Technology

ART acquired three patents related to time and frequency domain analysis of electrocardiogram signals including U.S. Patent No. 5,117,833 entitled "Bi-Spectral Filtering of Electrocardiogram Signals to Determine Selected QRS Potentials," (the "Bi-Spec Patent") in 1993. These technologies are utilized in the current version of PREDICTOR. In March 1997, the U.S. Patent Office granted United States Patent No. 5,609,158 entitled "Apparatus and Method for Predicting Cardiac Arrhythmia, by Detection of Micropotentials and Analysis of all ECG Segments and Intervals" which covers a frequency domain analysis technique for SAECG data.

The Company believes that ART's products do not and will not infringe on patents or violate proprietary rights of others. In the event that ART's products infringe patents or proprietary rights of others, ART may be required to modify the design of its products or obtain a license. There can be no assurance that ART will be able to do so in a timely manner upon acceptable terms and conditions. In addition, there can be no assurance that ART will have the financial or other resources necessary to enforce or defend a patent infringement or proprietary rights violation action. Moreover, if ART's products infringe patents or proprietary rights of others, ART could, under certain circumstances, become liable for damages, which could have a material adverse effect on earnings.

Micron employs a highly complex, proprietary non-patented multi-step manufacturing process for its silver / silver chloride-plated sensors. To maintain trade secrets associated with the manufacture of disposable electrode sensors, all employees are required to sign non-disclosure and/or non-competition agreements. Micron uses a patented material in the production of some sensors. Micron paid $2,966 in 2009, and $4,288 in 2008 in royalties associated with this patent.

Government Regulation

ART's software products are subject to, and ART believes currently comply with, material clearance and distribution requirements from governmental regulatory authorities, principally the FDA and the European Union (EU) equivalent agency. These agencies promulgate quality system requirements under which a medical device is to be developed, validated and manufactured. The development of the product line will be managed in accordance with applicable regulatory requirements.

Micron's sensor elements are components used in medical devices designed and manufactured by original equipment manufacturers. As such, these elements are not required to be listed with regulatory agencies and do not require regulatory clearance for distribution. However, because Micron primarily distributes sensors to manufacturers for use in finished medical devices, Micron exercises as stringent controls over its manufacturing processes and finished products as would be required if the sensors were considered medical devices.

The MIT division manufactures parts for invasive medical devices, components for medical equipment, patented disposable medical laboratory products, and patented military applications. Customers own the product designs and are, therefore, subject to FDA, Department of Defense and EU regulations. While such products are a part of a medical device or other regulated equipment, customers are the regulated entity for the clearance of those products. MIT exercises stringent controls over all their manufacturing operations, and complies with any special controls required by their customers.

Environmental Regulation

Micron's operations involve use of hazardous and toxic materials, and generate hazardous, toxic and other wastes. Its operations are subject to federal, state and local laws and regulations governing the use, storage, handling and disposal of such materials and certain waste products. Although management believes that the safety procedures for using, handling, storing and disposing of such materials comply with these standards required by state and federal laws and regulations, the Company cannot completely eliminate the risk of accidental contamination or injury from these materials.

Since its inception, Micron has expended significant funds to train its personnel, install waste treatment and recovery equipment and to retain an independent environmental consulting firm to regularly review, monitor and upgrade its air and waste water treatment activities. Management continues to evaluate and test many possible technological advances that reduce or eliminate the need for and use of hazardous materials in the manufacturing processes. The acquisition of equipment to eliminate a hazardous chemical from the process further emphasizes the commitment to the reduction and elimination of certain hazardous processes. Costs of compliance are not currently material to the Company's operation. Micron believes that the operation of its manufacturing facility is in compliance with currently applicable safety, health and environmental laws and regulations.

Employees

As of December 31, 2009, the Company had 89 full-time and 4 part-time employees. The employees of the Company are not represented by a union, and the Company believes its relationship with the employees is satisfactory.

FORWARD–LOOKING STATEMENTS

In the Company's effort to make the information in this prospectus more meaningful, this prospectus contains both historical and forward-looking statements within the meaning of Section 27A of the Securities Act, Section 21E of the Exchange Act, and information relating to the Company that is based on management's exercise of business judgment as well as assumptions made by and information currently available to management.

Any forward looking statements made herein are based on current expectations of the Company that involves a number of risks and uncertainties and should not be considered as guarantees of future performance. These statements are made under the Safe Harbor Provisions of the Private Securities Litigation Reform Act of 1995. Forward-looking statements may be identified by the use of words such as "expect," "anticipate," "believe," "intend," "plans," "predict," or "will". The factors that could cause actual results to differ materially include: impact of competitive products and pricing, product demand and market acceptance risks, the presence of competitors with greater financial resources than the Company, product development and commercialization risks, changing economic conditions in developing countries, and an inability to arrange additional debt or equity financing.

Although the Company believes that its expectations are based on reasonable assumptions, it can give no assurance that its expectations will materialize. Many factors could cause actual results to differ materially from the forward-looking statements. Several of these factors include, in addition to those contained in "Risk Factors," without limitation:

- the ability to maintain the Company's current pricing model and/or decrease the cost of sales;
- a stable interest rate market and/or a stable currency rate environment in the world, and specifically the countries where the Company is doing business in or plans to do business in;
- continued availability of supplies or materials used in manufacturing at competitive prices;
- volatility in commodity and energy prices and the Company's ability to offset higher costs with price increases;
- adverse regulatory developments in the United States or any other country the Company plans to do business in;
- entrance of competitive products in the Company's markets;

- the ability of management to execute plans and motivate personnel in the execution of those plans;
- no adverse publicity related to the Company and or its products;
- no adverse claims relating to the Company's intellectual property;
- the adoption of new, or changes in, accounting principles;
- the passage of new, or changes in, regulations; legal proceedings;
- the ability to maintain compliance with the NYSE Amex requirements for continued listing of the common stock;
- the costs inherent with complying with statutes and regulations applicable to public reporting companies, such as the Sarbanes-Oxley Act of 2002;
- the ability to efficiently integrate future acquisitions and other new lines of business that the Company may enter in the future, if any; and
- other risks referenced from time to time elsewhere in this report and in the Company's filings with the SEC.

The Company is under no obligation and does not intend to update, revise or otherwise publicly release any revisions to these forward-looking statements to reflect events or circumstances after the date hereof or to reflect the occurrence of any unanticipated events.

RISK FACTORS

In addition to the other information in this prospectus and the Company's Exchange Act reports, the following factors should be considered in evaluating the Company and its business. The risks and uncertainties described below are not the only ones facing the Company. Additional risks and uncertainties that the Company does not presently know or currently deems immaterial may also impair the Company's business, results of operations and financial condition.

The Company's operating results may fluctuate significantly as a result of a variety of factors.

The Company's operating results may fluctuate significantly in the future as a result of a variety of factors, many of which are outside of its control. These factors include:

- the ability to maintain the current pricing model and/or decrease the cost of sales;
- the ability to increase sales of higher margin products;
- variations in the mix of products sold;
- the level of demand for our products and services and those that the Company may develop or acquire;
- volatility in commodity and energy prices and the ability to offset higher costs with price increases;
- variability of customer delivery requirements;
- continued availability of supplies or materials used in manufacturing at competitive prices;
- the amount and timing of investments in capital equipment, sales and marketing, engineering and information technology resources; and
- general economic conditions.

As a strategic response to changes in the competitive environment, we may from time to time make certain pricing, service, technology or marketing decisions or business or technology acquisitions that could have a material adverse effect on the quarterly and annual results. Due to all of these factors, the operating results may fall below the expectations of securities analysts, stockholders and investors in any future period.

Large OEM customers can change their demand on short notice, further adding to the unpredictability of the quarterly sales and earnings.

The quarterly results have in the past and may in the future vary due to the lack of dependable long-term demand forecasts from the larger OEM customers. In addition to this risk, many of the Company's OEM customers have the right to change their demand schedule, either up or down, within a relatively short time horizon. These changes may result in the Company incurring additional working capital costs and causing increased manufacturing expenses due to these short-term fluctuations. In particular, the quarterly operating results have in the past fluctuated as a result of some of the larger OEM customers changing their orders within a fiscal quarter. The expense levels and inventory, to a large extent, are based on shipment expectations in the quarter. If sales levels fall below these expectations, through a delay in orders or otherwise, operating results are likely to be adversely affected. Although we continue to attempt to lessen the dependency on a few large customers, the Company can provide no assurance that it will be able to materially alter this dependency in the immediate future, if at all.

A significant portion of our revenues are derived from the sale of a single product line.

In fiscal years 2009 and 2008, the Company derived 42% of its revenues from medical electrode sensors for use in disposable electrodes. While the technology in electrode sensors has been used for many years, there is no assurance that a new patented or unpatented technology might not replace the existing disposable electrode sensors. Any substantial technological advance that eliminates the Company's products will have a material adverse effect on the operating results.

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The Company is dependent on a limited number of customers.

In the fiscal years 2009 and 2008, 51% and 56%, respectively, of the Company's revenues were derived from individual customers with 10% or more of the total sales. The loss of any one or more of these customers might have an immediate significant adverse effect on our financial results. In an effort to maintain this customer base, more favorable terms than might otherwise be agreed to could be granted. Currently, the Company generally does not receive purchase volume commitments extending beyond several months. Large corporations can shift focus away from a need for the Company's products with little or no warning.

Failure to comply with Quality System Regulations or industry standards could result in a material adverse effect on the business and results of operations.

The Company's Quality Management System complies with the requirements of ISO 9001:2000 and ISO 13485:2005. If the Company were not able to comply with the Quality Management System or industry-defined standards, the Company may not be able to fill customer orders to the satisfaction of the customers. Failure to produce products compliant with these standards could lead to a loss of customers which would have an adverse impact on the business and results of operations.

If trade secrets are not kept confidential, the secrets may be used by others to compete against the Company.

Micron relies on unpatented trade secrets to protect its proprietary processes and there are no assurances that others will not independently develop or acquire substantially equivalent technologies or otherwise gain access to the proprietary process. Ultimately the meaningful protection of such unpatented proprietary technology cannot be guaranteed. The Company relies on confidentiality agreements with its employees. Remedies for any breach by a party of these confidentiality agreements may not be adequate to prevent such actions. Failure to maintain trade secret protection, for any reason, could have a material adverse effect on the Company.

The initiatives that the Company is implementing in an effort to improve our manufacturing productivity could be unsuccessful, which could harm its business and results of operations.

In an effort to improve manufacturing productivity, the Company has implemented several strategic initiatives focusing on improving the manufacturing processes and procedures. Management believes these initiatives should improve customer satisfaction as well as revenue and income. However, in the event these initiatives are not successful, due to systemic failure to fully embrace the concepts and maximize the benefits of the investments of equipment and technology, the results of operations will not improve as expected.

If the Company is unable to keep up with rapid technological changes, the processes, products or services may become obsolete and unmarketable.

The medical device and medical software industries are characterized by technological change over time. Although the Company attempts to expand technological capabilities in order to remain competitive, discoveries by others may make the Company's processes or products obsolete. If the Company cannot compete effectively in the marketplace, the potential for profitability and financial position will suffer.

General economic conditions, largely out of the Company's control, may adversely affect the Company's financial condition and results of operations.

The Company's business may be affected by changes in general economic conditions, both nationally and internationally. Recessionary economic cycles, higher interest rates, higher fuel and other energy costs, inflation, higher levels of unemployment, changes in the laws or industry regulations or other economic factors may adversely

affect the demand for the Company's products. Additionally, these economic factors, as well as higher tax rates, increased costs of labor, insurance and healthcare, and changes in other laws and regulations may increase the Company's cost of sales and operating expenses, which may adversely affect the Company's financial condition and results of operations.

The Company is subject to stringent environmental regulations.

The Company is subject to a variety of federal, state and local requirements governing the protection of the environment. These environmental regulations include those related to the use, storage, handling, discharge and disposal of toxic or otherwise hazardous materials used in or resulting from the Company's manufacturing processes. Failure to comply with environmental law could subject the Company to substantial liability or force us to significantly change our manufacturing operations. In addition, under some of these laws and regulations, the Company could be held financially responsible for remedial measures if its properties are contaminated, even if it did not cause the contamination.

A product liability suit could adversely affect our operating results.

The testing, manufacture, marketing and sale of medical devices of the customers entail the inherent risk of liability claims or product recalls. If the customers are involved in a lawsuit, it is foreseeable that the Company would also be named. Although the Company maintains product liability insurance, coverage may not be adequate. Product liability insurance is expensive, and in the future may not be available on acceptable terms, if at all. A successful product liability claim or product recall could have a material adverse effect on the business, financial condition, and ability to market product in the future.

The Company could become involved in litigation over intellectual property rights.

The medical device industry has been characterized by extensive litigation regarding patents and other intellectual property rights. Litigation, which would likely result in substantial cost to us, may be necessary to enforce any patents issued or licensed to us and/or to determine the scope and validity of others' proprietary rights. In particular, competitors and other third parties hold issued patents, which may result in claims of infringement against the Company or other patent litigation. The Company also may have to participate in interference proceedings declared by the United States Patent and Trademark Office, which could result in substantial cost, to determine the priority of inventions.

The Company may make acquisitions of companies, products or technologies that may disrupt the business and divert management’s attention, adversely impacting our results of operations and financial condition.

The Company may make acquisitions of complementary companies, products or technologies from time to time. Any acquisitions will require the assimilation of the operations, products and personnel of the acquired businesses and the training and motivation of these individuals. Management may be unable to maintain and improve upon the uniform standards, controls, procedures and policies if the Company fails in this integration. Acquisitions may cause disruptions in operations and divert management’s attention from day-to-day operations, which could impair our relationships with current employees, customers and strategic partners. The Company also may have to, or choose to, incur debt or issue equity securities to pay for any future acquisitions. The issuance of equity securities for an acquisition could be substantially dilutive to our stockholders’ holdings. In addition, profitability may suffer because of such acquisition-related costs or amortization costs for other intangible assets. If management is unable to fully integrate acquired businesses, products, technologies or personnel with existing operations, the Company may not receive the intended benefits of such acquisitions. The Company is not currently party to any agreements, written or oral, for the acquisition of any company, product or technology.

Healthcare policy changes, including pending proposals to reform the U.S. healthcare system, may have a material adverse effect on the results.

Healthcare costs have risen significantly over the past decade. There have been and continue to be proposals by legislators, regulators and third-party payers to keep these costs down. Certain proposals, if passed, would impose limitations on the prices we will be able to charge for our products, or the amounts of reimbursement available for our products from governmental agencies or third-party payers. These limitations could have a material adverse effect on the Company’s financial position and results of operations.

Changes in the health care industry in the U.S. and elsewhere could adversely affect the demand for the products as well as the way in which the Company conducts business. Significantly, the new administration and Congressional and state leaders have expressed a strong desire to reform the U.S. healthcare system. Recently, President Obama and members of Congress have proposed significant reforms. On November 7, 2009, the House of Representatives passed and, on December 24, 2009, the Senate passed health reform legislation which if enacted would require most individuals to have health insurance, establish new regulations on health plans, create insurance pooling mechanisms and a government health insurance option to compete with private plans, and other expanded public health care

measures. This legislation also would reduce Medicare spending on services provided by hospitals and other providers and the House bill proposes a 2.5 percent tax on the first taxable sale of any medical device. The Senate bill included a $2 billion annual fee or excise tax on the medical device manufacturing sector. If the excise taxes are enacted into law, the Company's results of operations may be materially and adversely affected.

The Company may be exposed to potential risks relating to internal control over financial reporting and the ability to have those controls attested to by the independent registered public accounting firm.

As directed by Section 404 of the Sarbanes-Oxley Act of 2002 ("SOX 404"), the Securities and Exchange Commission adopted rules requiring public companies to include a report of management on the Company's internal control over financial reporting in their annual reports, including Form 10-K. In addition, the independent registered public accounting firm auditing a company's financial statements must also attest to and report on the Company's assessment of the effectiveness of the company's internal control over financial reporting as well as the operating effectiveness of the company's internal controls. The Company was subject to the management evaluation and review portion of these requirements for the fiscal year ended December 31, 2009. Management is evaluating the Company's internal control systems in order to allow the independent auditors attest to, management's internal controls, as a required part of the Annual Report on Form 10-K beginning with the report for the fiscal year ended December 31, 2010.

In the event the Company no longer qualifies as a smaller reporting company at the end of 2010, it may be subject to more stringent requirements under SOX 404. Accordingly, there can be no assurance that the Company will receive any required attestation from the independent registered public accounting firm. In the event the independent register public accounting firm identifies significant deficiencies or material weaknesses in the Company's internal controls that management cannot remediate in a timely manner or is unable to receive an attestation from the independent registered public accounting firm with respect to the Company's internal controls, investors and others may lose confidence in the reliability of the financial statements and the Company's ability to obtain equity or debt financing could suffer.

THE OFFERING

This prospectus relates to the Shares which may be acquired by certain employees, officers, directors and consultants to the Company who may be deemed affiliates of the Company or who hold "control stock" issued to such persons pursuant to the terms of the 2010 Plan. The 2010 Plan was adopted by the Board of Directors on March 10, 2010, and subsequently approved by the Company's stockholders on April 30, 2010. No options, awards or Shares have been issued as of the date hereof.

SELLING SECURITYHOLDERS

Shares may be acquired by certain employees, officers, directors and consultants to the Company who may be deemed affiliates of the Company or who hold "control stock" issued to such persons pursuant to the terms of the 2010 Plan. As the names and amounts of securities to be reoffered become known, we will supplement this prospectus with such information.

Shares covered by this prospectus may be reoffered and resold from time to time by each selling securityholder through brokers or dealers on the NYSE Amex or otherwise at prices acceptable to the selling securityholder. To the Company's knowledge, no specific brokers or dealers have been designated by any selling securityholder nor has any agreement been entered into in respect of brokerage commissions or for the exclusive sale of any securities, which may be offered pursuant to this prospectus. Alternatively, the selling securityholder may from time to time offer the Shares through underwriters, dealers or agents, which may receive compensation in the form of underwriting discounts, concessions or commissions from the selling securityholder and/or the purchasers of the Shares for whom they may act as agents. The selling securityholder and any underwriters, dealers or agents that participate in the distribution of the Shares may be deemed to be "underwriters" under the Securities Act and any profit on the sale of the Shares by them and any discounts, commissions or concessions received by any such underwriters, dealers or agents might be deemed to be underwriting discounts and commissions under the Securities Act.

Under applicable rules and regulations under the Exchange Act, any person engaged in a distribution of any of the shares may not simultaneously engage in market activities with respect to the Common Stock for the applicable period under Regulation M prior to the commencement of such distribution. In addition and without limiting the foregoing, the selling securityholders will be governed by the applicable provisions of the Securities Act and Exchange Act, and the rules and regulations thereunder, including without limitation Rules 10b-5 and Regulation M, which provisions may limit the timing of purchases and sales of any of the shares by the selling securityholders. Furthermore, under Regulation M, persons engaged in a distribution of securities are prohibited from simultaneously engaging in market making and certain other activities with respect to such securities for a specified period of time prior to the commencement of such distributions subject to specified exceptions or exemptions. All of the foregoing may affect the marketability of our securities.

The Company will pay all of the fees and expenses incident to the registration of the Shares (other than any fees or expenses of any counsel retained by the selling securityholder and any out-of-pocket expenses incurred by the selling securityholder or any person retained by the selling securityholder in connection with the registration of the Shares)

and fees and expenses of compliance with state securities or blue sky laws and commissions. The expenses payable by the Company are estimated to be approximately $5,000.

DESCRIPTION OF CAPITAL STOCK

The following description of our capital stock and certain provisions of the Certificate of Incorporation, as amended, and the By-Laws is a summary and is qualified in its entirety by reference to the provisions of the Certificate of Incorporation and the By-Laws, copies of which are filed with the SEC.

The Company's authorized capital stock consists of 10,000,000 shares of Common Stock, $0.01 par value and 2,000,000 shares of preferred stock, par value $1.00 per share. As of March 4, 2010, there were outstanding:

- 2,675,481 shares of Common Stock; and
- 254,500 shares issuable upon exercise of options issued pursuant to the Company's 2001 Stock Option Plan.

Common Stock

The Company is authorized to issue 10,000,000 shares of Common Stock, $0.01 par value per share. Subject to preferences that may be applicable to any preferred stock outstanding at the time, the holders of outstanding shares of Common Stock are entitled to receive dividends out of assets legally available therefore at such times and in such amounts as the Board of Directors may from time to time determine. Each shareholder is entitled to one vote for each share of Common Stock held on all matters submitted to a vote of shareholders. Cumulative voting for the election of directors is not authorized.

The Common Stock is not entitled to preemptive rights and is not subject to conversion or redemption. Upon liquidation, dissolution or winding up of the Company, the remaining assets legally available for distribution to shareholders, after payment of claims of creditors and payment of liquidation preferences, if any, on outstanding preferred stock, are distributable ratably among the holders of the Common Stock and any participating preferred stock outstanding at that time. Each outstanding share of Common Stock is legally issued, fully paid and nonassessable.

Preferred Stock

The Certificate of Incorporation authorizes the Company to issue 2,000,000 shares of serial "blank check" preferred stock, $1.00 par value per share. "Blank check" preferred stock allows the Board of Directors to create one or more series of preferred stock, and to designate the rights, privileges, restrictions, preferences and limitations of any given series of preferred stock. Accordingly, the Board of Directors may, without stockholder approval, issue shares of preferred stock with dividend, liquidation, conversion, voting or other rights that could adversely affect the voting power or other rights of the holders of our Common Stock. "Blank check" preferred stock could also be issued to discourage a change in control, although we have no present intent to issue any additional series of our preferred stock. The Board of Directors' ability to issue "blank check" preferred stock serves as a traditional anti-takeover measure installed to present obstacles to takeovers. This provision of our Certificate of Incorporation makes it difficult for a majority shareholder to gain control of the Company and, therefore, may be beneficial to the Company's management and its Board in a hostile tender offer and may have an adverse impact on shareholders who may want to participate in such a tender offer. Also, the issuance of preferred stock with voting and conversion rights could materially and adversely affect the voting power of the holders of the Common Stock and may have the effect of delaying, deferring or preventing a change in control of the Company.

As of the date of this prospectus there are no shares of preferred stock issued and outstanding.

Transfer Agent

The transfer agent for the Company's Common Stock is Continental Stock Transfer & Trust Co., 17 Battery Place, New York, NY 10004.

USE OF PROCEEDS

The Company will not receive any of the proceeds from the sale of the Shares. All proceeds received from the sale of Shares under the 2010 Plan will be for the account of the selling securityholders described above.

PLAN OF DISTRIBUTION

Shares covered by this prospectus may be reoffered and resold from time to time by the class of eligible selling securityholders referred to above through brokers on the NYSE Amex or otherwise at prices acceptable to the selling securityholder. To the Company's knowledge, no specific brokers or dealers have been designated by any selling securityholder nor has any agreement been entered into in respect of brokerage commissions or for the exclusive sale of any securities, which may be offered pursuant to this prospectus. Alternatively, the selling securityholder may from time to time offer the Shares through underwriters, dealers or agents, which may receive compensation in the form of underwriting discounts, concessions or commissions from the selling securityholder and/or the purchasers of the Shares for whom they may act as agents. The selling securityholder and any underwriters, dealers or agents that participate in the distribution of the Shares may be deemed to be “underwriters” under the Securities Act and any profit on the sale of the Shares by them and any discounts, commissions or concessions received by any such underwriters, dealers or agents might be deemed to be underwriting discounts and commissions under the Securities Act.

Any securities covered by this prospectus that qualify for sale pursuant to Rule 144 under the Securities Act may be sold under that Rule rather than pursuant to this prospectus. There can be no assurance that the selling securityholders will sell any or all of the Shares of Common Stock offered hereunder.

LEGAL MATTERS

Certain legal matters in connection with the Shares have been passed upon for the Company by Ellenoff Grossman & Schole LLP, 1133 Connecticut Ave N.W., 11th Floor, Washington, D.C. 20036.

EXPERTS

The financial statements incorporated by reference in this prospectus have been audited by CCR LLP, an independent registered public accounting firm, to the extent and for the periods set forth in their report, incorporated herein by reference and are incorporated herein by reference in reliance upon such report given upon the authority of said firm as experts in auditing and accounting.

NO DEALER, SALESMAN OR ANY OTHER PERSON HAS BEEN AUTHORIZED IN CONNECTION WITH THIS OFFERING TO GIVE ANY INFORMATION OR TO MAKE ANY REPRESENTATIONS OTHER THAN THOSE CONTAINED IN THIS PROSPECTUS. THE PROSPECTUS DOES NOT CONSTITUTE AN OFFER OR A SOLICITATION IN ANY JURISDICTION TO ANY PERSON TO WHOM IT IS UNLAWFUL TO MAKE SUCH AN OFFER OR SOLICITATION. NEITHER THE DELIVERY OF THIS PROSPECTUS NOR ANY SALE MADE HEREUNDER SHALL, UNDER ANY CIRCUMSTANCES, CREATE AN IMPLICATION THAT THERE HAS BEEN NO CHANGE IN THE CIRCUMSTANCES OF THE COMPANY OR THE FACTS HEREIN SET FORTH SINCE THE DATE HEREOF.

ARRHYTHMIA RESEARCH TECHNOLOGY, INC.

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500,000 Shares of Common Stock

PROSPECTUS

May 6, 2010

ARRHYTHMIA RESEARCH TECHNOLOGY, INC. HAS FILED WITH THE SECURITIES AND EXCHANGE COMMISSION, WASHINGTON, D.C., A REGISTRATION STATEMENT UNDER THE SECURITIES ACT WITH RESPECT TO THE SHARES OFFERED HEREBY. THIS PROSPECTUS OMITS CERTAIN INFORMATION CONTAINED IN THE REGISTRATION STATEMENT. THE INFORMATION OMITTED MAY BE OBTAINED FROM THE SECURITIES AND EXCHANGE COMMISSION UPON PAYMENT OF THE

REGULAR CHARGE THEREFOR.

PART II

INFORMATION REQUIRED IN THE REGISTRATION STATEMENT

ITEM 3. INCORPORATION OF DOCUMENTS BY REFERENCE

The SEC allows us to incorporate by reference information from other documents that we file with them, which means that we can disclose important information by referring to those documents. The information incorporated by reference is considered to be part of this prospectus, and information that we file later with the SEC will automatically update and supersede this information.

We incorporate by reference the documents listed below together with any amendments thereof:

- Annual Report on Form 10-K for the fiscal year ended December 31, 2009, filed with the SEC on March 10, 2010;
- Current Reports on Form 8-K filed with the SEC on May 5, 2010;
- Quarterly Report on Form 10-Q filed with the SEC on May 4, 2010; and
- The description of the Company's Common Stock contained in the Company's Registration Statement on Form 8-A, filed with the SEC on February 12, 1992, including any amendment or reports filed for the purpose of updating such description.

The Company also incorporates by reference additional documents that may be filed with the SEC under Section 13(a), 13(c), 14 or 15(d) of the Exchange Act prior to the sale of all of the shares covered by this registration statement.

The Company will provide to you, without charge, upon your written or oral request, a copy of any or all of the documents that it incorporates by reference, including exhibits. Please direct requests to: Arrhythmia Research Technology, Inc., 25 Sawyer Passway, Fitchburg, Massachusetts 01420, Attn: Corporate Secretary; (978) 345-5000.

ITEM 4. DESCRIPTION OF SECURITIES

Not applicable.

ITEM 5. INTERESTS OF NAMED EXPERTS AND COUNSEL

Not applicable.

ITEM 6. INDEMNIFICATION OF OFFICERS AND DIRECTORS

Section 145 of the General Corporation Law of the State of Delaware grants each corporation organized thereunder, such as the Company, the power to indemnify its directors and officers against liability for certain of their acts. Section 102(b)(7) of the Delaware Corporation Law permits a provision in the certificate of incorporation of each corporation organized thereunder eliminating or limiting, with specified exceptions, the personal liability of a director to the corporation or its stockholders for monetary damages for breach of fiduciary duty as a director. The Company's certificate of incorporation contains this provision. The foregoing statements are subject to the detailed provisions of Sections 145 and 102(b)(7) of the Delaware General Corporation Law.

Article VI of the Company's By-Laws provides that the Company will indemnify and hold harmless its executive officers and directors to the fullest extent permitted by the Delaware General Corporation Law as it presently exists or may be amended from time to time, who were or are made or are threatened to be made a party or are or may be otherwise involved in any action, suit or proceeding, whether civil, criminal, administrative or investigative, by reason of the fact that he or she, or a person for whom he or she is the legal representative, is or was a director or executive officer of the corporation or, while a director or executive officer of the corporation, is or was serving at the request of the corporation as a director, officer, employee or agent of another corporation or of a partnership, joint venture, trust, enterprise or nonprofit entity, including service with respect to employee benefit plans, against all expenses (including attorneys' fees, judgments, fines and amounts paid in settlement) actually and reasonably incurred by such person. The Company shall also, to the fullest extent permitted by applicable law, pay the expenses (inducing attorneys' fees) incurred by such directors and executive officers in defending any civil, criminal, administrative or investigative action, suit or proceeding in advance of its final disposition; provided, however, that, to the extent required by law, such payment of expenses in advance of the final disposition of the proceeding shall be made only upon receipt of an undertaking by such person to repay all amounts advanced if it should be ultimately determined that such person is not entitled to be indemnified under Article VI or otherwise. The Company may, to the extent authorized from time to time by the Board of Directors, provide rights to indemnification and to the advancement of expenses to officers, employees and agents of the Company similar to those conferred in Article VI to directors and executive officers of the corporation. The Company maintains directors' and officers' liability insurance, including a reimbursement policy in favor of the Company.

Insofar as indemnification for liabilities arising under the Securities Act may be permitted to directors, officers and controlling persons pursuant to the foregoing provisions, or otherwise, the Company has been advised that in the opinion of the SEC such indemnification is against public policy as expressed in the Securities Act and is, therefore, unenforceable.

ITEM 7. EXEMPTION FROM REGISTRATION CLAIMED

Not applicable.

ITEM 8. EXHIBITS

Exhibit	Description
4.1	Arrhythmia Research Technology, Inc. 2010 Equity Incentive Plan
5.1	Opinion of Ellenoff Grossman & Schole LLP
23.1	CCR LLP Consent
23.2	Ellenoff Grossman & Schole LLP Consent (included in Exhibit 5.1)
24.1	Power of Attorney is contained on the signature page of this Registration Statement

ITEM 9. UNDERTAKINGS

a. The undersigned Registrant will file, during any period in which it offers or sells securities, a post-effective amendment to this registration statement to include material information with respect to the plan of distribution not previously disclosed in the registration statement or any material change to such information in the registration statement.

b. The undersigned registrant hereby undertakes that, for purposes of determining any liability under the Securities Act of 1933, each filing of the registrant's annual report pursuant to Section 13(a) or 15(d) of the Exchange Act (and, where applicable, each filing of an employee benefit plan's annual report pursuant to Section 15(d) of the Exchange Act) that is incorporated by reference in the registration statement shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.

c. Insofar as indemnification for liabilities arising under the Securities Act may be permitted to directors, officers and controlling persons of small business issuer pursuant to the foregoing provisions, or otherwise, the small business issuer has been advised that in the opinion of the Securities and Exchange Commission such indemnification is against public policy as expressed in the Act and is, therefore, unenforceable. In the event that a claim for indemnification against such liabilities (other than the payment by the registrant of expenses incurred or paid by a director, officer or controlling person of the registrant in the successful defense of any action, suit or proceeding) is asserted by such director, officer or controlling person in connection with the securities being registered, the registrant will, unless in the opinion of its counsel the matter has been settled by controlling precedent, submit to a court of appropriate jurisdiction the question whether such indemnification by it is against public policy as expressed in the Act and will be governed by the final adjudication of such issue.

SIGNATURES

Pursuant to the requirements of the Securities Act of 1933, the Registrant certifies that it has reasonable grounds to believe that it meets all of the requirements for filing on Form S-8 and has duly caused this Registration Statement to be signed on its behalf by the undersigned, thereunto duly authorized, in the City of Fitchburg, Massachusetts, on the 6th day of May, 2010.

ARRHYTHMIA RESEARCH TECHNOLOGY, INC.

By: /s/ David A. Garrison
David A. Garrison
Chief Financial Officer

POWER OF ATTORNEY

Each of the undersigned officers and directors of the Registrant, Arrhythmia Research Technology, Inc., whose signature appears below, hereby appoints David A. Garrison and James E. Rouse, jointly and individually, as attorneys-in-fact for the undersigned with full power of substitution, to execute in his or her name and on behalf of such person, individually, and in each capacity stated below, this Registration Statement on Form S-8 and one or more amendments (including post-effective amendments) to this Registration Statement and any related registration statement under Rule 462(b) under the Securities Act of 1933 as the attorney-in-fact shall deem appropriate, and to file any such amendment (including exhibits thereto and other documents in connection herewith) to this Registration Statement on Form S-8 or Rule 462(b) registration statement with the Securities and Exchange Commission, granting unto said attorneys-in-fact, and each of them, full power and authority to do and perform each and every act and thing requisite and necessary to be done in and about the premises, as fully to all intents and purposes as such person might or could do in person, hereby ratifying and confirming all that said attorneys-in-fact, or either of them, may lawfully do or cause to be done by virtue hereof.

Pursuant to the requirements of the Securities Act of 1933, as amended, this Registration Statement has been signed by the following persons in the capacities and on the dates indicated.

Signature	Title	Date
/s/ James E. Rouse James E. Rouse	President, Chief Executive Officer and Director (principal executive officer)	May 6, 2010
/s/ David A. Garrison David A. Garrison	Executive Vice President and Chief Financial Officer (principal financial officer)	May 6, 2010
/s/ E.P. Marinos E. P. Marinos	Chairman of the Board and Director	May 6, 2010
/s/ Julius Tabin Julius Tabin	Director	May 6, 2010
/s/ Paul F. Walter	Director	May 6, 2010

Paul F. Walter		
/s/ Jason R. Chambers Jason R. Chambers	Director	May 6, 2010

EXHIBIT INDEX

Exhibit	Description
4.1	Arrhythmia Research Technology, Inc. 2010 Equity Incentive Plan
5.1	Opinion of Ellenoff Grossman & Schole LLP
23.1	CCR LLP Consent
23.2	Ellenoff Grossman & Schole LLP Consent (included in Exhibit 5.1)
24.1	Power of Attorney is contained on the signature page of this Registration Statement