

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

**FORM S-8  
REGISTRATION STATEMENT  
UNDER  
THE SECURITIES ACT OF 1933**

**ATRICURE, INC.**

*(Exact name of Registrant as specified in its charter)*

**Delaware**  
*(State or other jurisdiction of  
incorporation or organization)*

**34-1940305**  
*(I.R.S. Employer  
Identification No.)*

**6033 Schumacher Park Drive  
West Chester, OH 45069  
(513) 755-4100**

*(Address, including zip code, and telephone number, including area code, of Registrant's principal executive offices)*

**ATRICURE, INC. 2001 STOCK OPTION PLAN  
ATRICURE, INC. 2005 EQUITY INCENTIVE PLAN**  
*(Full title of the Plan)*

**David J. Drachman  
President and Chief Executive Officer**

**AtriCure, Inc.  
6033 Schumacher Park Drive  
West Chester, OH 45069  
(513) 755-4100**

*(Name, address, including zip code, and telephone number, including area code, of agent for service)*

**Copy to:  
Theodore L. Polin, Esq.  
Epstein Becker & Green, P.C.  
250 Park Avenue  
New York, New York 10017  
(212) 351-4500**

**CALCULATION OF REGISTRATION FEE**

Title of Class of Securities To Be Registered	Amount To Be Registered (1)	Proposed Maximum Offering Price Per Share	Proposed Maximum Aggregate Offering Price	Amount of Registration Fee
Common Stock, \$0.001 par value (2)	1,084,777	\$ 2.73(3)	\$ 2,961,442(3)	\$ 317
Common Stock, \$0.001 par value (4)	555,854	\$ 13.04(5)	\$ 7,248,337(5)	\$ 776
Common Stock, \$0.001 par value (6)	1,672,523	\$ 11.00(7)	\$ 18,397,753(7)	\$ 1,969
<b>TOTAL</b>	<b>3,313,154</b>		<b>\$ 28,607,532</b>	<b>\$ 3,062</b>

- (1) Includes such additional shares as may become issuable by reason of stock splits, stock dividends or similar transactions.
- (2) Consists of shares issuable upon exercise of outstanding options granted under the AtriCure, Inc. 2001 Stock Option Plan.
- (3) Computed in accordance with Rule 457(h) of the Securities Act of 1933, as amended, solely for the purpose of calculating the registration fee. The computation is based on the weighted average per share exercise price (rounded to the nearest cent) of outstanding options granted under the AtriCure, Inc. 2001 Stock Option Plan, the shares issuable upon exercise of which are registered hereby.
- (4) Consists of shares issuable upon exercise of outstanding options granted under the AtriCure, Inc. 2005 Equity Incentive Plan.
- (5) Computed in accordance with Rule 457(h) of the Securities Act of 1933, as amended, solely for the purpose of calculating the registration fee. The computation is based on the weighted average per share exercise price (rounded to the nearest cent) of outstanding options granted under the AtriCure, Inc. 2005 Equity Incentive Plan, the shares issuable upon exercise of which are registered hereby.

- (6) Consists of shares available for future issuance, including upon exercise of options available for future grant, under the AtriCure, Inc. 2005 Equity Incentive Plan.
  - (7) Computed in accordance with Rule 457(h) of the Securities Act of 1933, as amended, solely for the purpose of calculating the registration fee. The computation is based of \$11.00 per share, the average of the high and low sales prices of the Registrant's common stock, as reported in the NASDAQ National Market on January 6, 2006.
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**PART I**  
**INFORMATION REQUIRED IN THE SECTION 10(A) PROSPECTUS**

**Item 1. Plan Information.**

The documents containing the information specified by Part I will be sent or given to eligible participants as specified by Rule 428(b)(1) under the Securities Act. These documents and the documents incorporated by reference herein pursuant to Item 3 of Part II below, taken together, constitute a Section 10(a) prospectus.

**Item 2. Registrant Information and Employee Plan Annual Information.**

We will provide without charge to each person to whom a copy of a Section 10(a) prospectus hereunder is delivered, upon the oral or written request of such person, a copy of any document incorporated by reference in Item 3 of Part II below. Requests should be directed to AtriCure, Inc. , 6033 Schumacher Park Drive, West Chester, OH 45069, Attn. Thomas J. Etergino, Chief Financial Officer, (513) 755-4100.

**PART II**  
**INFORMATION REQUIRED IN THE REGISTRATION STATEMENT**

**Item 3. Incorporation of Documents by Reference.**

We incorporate by reference the following documents filed by us with the SEC:

<u>Our SEC filings</u>	<u>Period covered or date of filing</u>
Prospectus filed pursuant to Rule 424(b)	August 8, 2005
Quarterly Reports on Form 10-Q	Quarter ended June 30, 2005, filed on September 19, 2005; quarter ended September 30, 2005, filed on November 15, 2005.
Current Reports on Form 8-K	August 16, 2005, September 9, 2005, November 3, 2005 and November 28, 2005.
The description of our common stock, contained in our Registration Statement on Form 8-A, including any amendments or reports filed for the purpose of updating such description	August 1, 2005.

In addition, all documents subsequently filed with the SEC by us pursuant to Sections 13(a), 13(c), 14 and 15(d) of the Securities Exchange Act of 1934, prior to the filing of a post-effective amendment which indicates that all securities offered hereunder have been sold or which deregisters all securities then remaining unsold, shall be deemed to be incorporated by reference in this Registration Statement and to be a part hereof from the date of filing of such documents. Any statement contained in a document incorporated or deemed to be incorporated by reference herein shall be deemed to be modified or superseded for purposes hereof to the extent that a statement contained herein or in any other subsequently filed document which also is incorporated or deemed to be incorporated by reference herein modifies or supersedes such statement. Any such statement so modified or superseded shall not be deemed, except as so modified or superseded, to constitute a part of this Registration Statement.

**Item 4. Description of Securities.**

Not applicable.

**Item 5. Interests of Named Experts and Counsel.**

The validity of the common stock registered hereunder will be passed upon for us by Epstein Becker & Green, P.C., New York, New York. As of the date of this registration statement, a member of Epstein Becker & Green, P.C. and his spouse hold an aggregate of 89,038 shares of our common stock and an option and warrant to purchase an aggregate of 9,189 shares of our common stock. Another member of Epstein Becker & Green, P.C. is our corporate secretary.

**Item 6. Indemnification of Directors and Officers.**

Under Section 145 of the Delaware General Corporation Law, we have broad powers to indemnify our officers, directors and third parties acting on our behalf against liabilities they may incur in such capacities, including liabilities under the Securities Act.

Our amended and restated certificate of incorporation and amended and restated bylaws provide that we will indemnify our directors and executive officers, and may indemnify our other officers, employees and agents, to the fullest extent permitted by the Delaware General Corporation Law. Under our amended and restated bylaws, we are also empowered to purchase insurance on behalf of any person whom we are required or permitted to indemnify. We have procured and intend to maintain a directors' and officers' liability insurance policy that insures such persons against the costs of defense, settlement or payment of a judgment under certain circumstances. We also have entered into indemnification agreements with our directors and executive officers for the indemnification of and advancement of expenses to these persons to the fullest extent permitted by law.

Insofar as indemnification for liabilities arising under the Securities Act may be permitted to directors, officers or persons controlling us pursuant to the foregoing provisions, we have been informed 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.**

<u>Exhibit Number</u>	<u>Description of Documents</u>
5.1	Opinion of Epstein Becker & Green, P.C.
10.1	2001 Stock Option Plan, incorporated by reference to Exhibit 10.1 to Amendment No. 1 to the Registration Statement on Form S-1, Registration No. 333-124197, previously filed with the Securities and Exchange Commission on June 14, 2005.
10.2	2005 Equity Incentive Plan, incorporated by reference to Exhibit 10.2 to Amendment No. 2 to the Registration Statement on Form S-1, Registration No. 333-124197, previously filed with the Securities and Exchange Commission on July 7, 2005.
23.1	Consent of Deloitte & Touche LLP.
23.2	Consent of Epstein Becker & Green, P.C. (included in Exhibit 5.1).
24.1	Power of Attorney (included on the signature page on page S-1).

## Item 9. Undertakings

(A) The undersigned Registrant hereby undertakes:

(1) To file, during any period in which offers or sales are being made, a post-effective amendment to this Registration Statement:

(i) To include any prospectus required by Section 10(a)(3) of the Securities Act of 1933;

(ii) To reflect in the prospectus any facts or events arising after the effective date of the Registration Statement (or the most recent post-effective amendment thereof) which, individually or in the aggregate, represent a fundamental change in the information set forth in the Registration Statement. Notwithstanding the foregoing, any increase or decrease in volume of securities offered (if the total dollar value of securities offered would not exceed that which was registered) and any deviation from the low or high end of the estimated maximum offering range may be reflected in the form of prospectus filed with the Commission pursuant to Rule 424(b) if, in the aggregate, the changes in volume and price represent no more than 20% change in the maximum aggregate offering price set forth in the "Calculation of Registration Fee" table in the effective Registration Statement;

(iii) To include any 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;

Provided, however, that paragraphs (A)(1)(i) and (A)(1)(ii) of this Section do not apply if the Registration Statement is on Form S-3, Form S-8 or Form F-3, and the information required to be included in a post-effective amendment by those paragraphs is contained in periodic reports filed with or furnished to the Commission by the Registrant pursuant to Section 13 or Section 15(d) of the Securities Exchange Act of 1934 that are incorporated by reference in the Registration Statement;

(2) that, for the purpose of determining any liability under the Act, each such post-effective amendment 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; and

(3) to remove from registration by means of a post-effective amendment any of the securities being registered which remain unsold at the termination of the offering.

(B) The undersigned Registrant hereby undertakes that, for purposes of determining any liability under the Act, 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 this 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 Act may be permitted to directors, officers and controlling persons of the Registrant pursuant to the provisions described in Item 6 above, or otherwise, the Registrant has been advised that in the opinion of the 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.

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 West Chester, Ohio, on the 12th day of January, 2006.

ATRICURE, INC.

By: /s/ David J. Drachman

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David J. Drachman,  
President and Chief Executive Officer  
(Principal Executive Officer)

#### POWER OF ATTORNEY

KNOW ALL PERSONS BY THESE PRESENTS, that each individual whose signature appears below constitutes and appoints David J. Drachman and Thomas J. Eterigino, and each of them, his or her true and lawful attorneys-in-fact and agents, with full power of substitution, for him or her and in his or her name, place and stead, in any and all capacities, to sign any and all amendments (including post-effective amendments) to this Registration Statement, and to file the same, with all exhibits thereto and all documents in connection therewith, with the Securities and Exchange Commission, granting unto said attorneys-in-fact and agents 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 he or she might or could do in person, hereby ratifying and confirming all that said attorneys-in-fact and agents, or his or their substitute or substitutes, may lawfully do or cause to be done by virtue hereof.

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

<u>Signature</u>	<u>Title</u>	<u>Date</u>
<u>/s/ David J. Drachman</u> David J. Drachman	President, Chief Executive Officer and Director (Principal Executive Officer)	January 10, 2006
<u>/s/ Thomas J. Eterigino</u> Thomas J. Eterigino	Vice President and Chief Financial Officer (Principal Financial and Accounting Officer)	January 12, 2006
<u>/s/ Richard M. Johnston</u> Richard M. Johnston	Chairman of the Board of Directors	January 9, 2006
<u>/s/ Donald C. Harrison, M.D.</u> Donald C. Harrison, M.D.	Director	January 12, 2006
<u>/s/ Alan L. Kaganov</u> Alan L. Kaganov	Director	January 12, 2006

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/s/ Karen P. Robards

Director

January 12, 2006

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Karen P. Robards

/s/ Norman R. Weldon, Ph.D.

Director

January 12, 2006

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Norman R. Weldon, Ph.D.

/s/ Lee R. Wrubel, M.D.

Director

January 10, 2006

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Lee R. Wrubel, M.D.

INDEX TO EXHIBITS

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January 12, 2006

AtriCure, Inc.  
6033 Schumacher Park Drive  
West Chester, OH 45069

Re: AtriCure, Inc. Registration Statement on Form S-8

Ladies and Gentlemen:

We have acted as counsel to AtriCure, Inc., a Delaware corporation (the "Company") in connection with its filing with the Securities and Exchange Commission of a registration statement on Form S-8 (the "Registration Statement") relating to the Company's 2001 Stock Option Plan (the "2001 Plan") covering 1,084,777 shares of common stock, \$0.001 par value ("Common Stock") and the Company's 2005 Equity Incentive Plan (the "2005 Plan") covering 2,228,377 shares of Common Stock.

We have examined instruments, documents, and records which we deemed relevant and necessary for the basis of our opinion hereinafter expressed. In such examination, we have assumed the following: (a) the authenticity of original documents and the genuineness of all signatures; (b) the conformity to the originals of all documents submitted to us as copies; and (c) the truth, accuracy, and completeness of the information, representations, and warranties contained in the records, documents, instruments, and certificates we have reviewed.

Based on such examination, we are of the opinion that (i) the 1,084,777 shares of Common Stock to be issued by the Company pursuant to the 2001 Plan have been duly authorized, and, when issued in accordance with the provisions of the 2005 Plan, will be validly issued, fully paid and non-assessable and (ii) the 2,228,377 shares of Common Stock to be issued by the Company pursuant to the 2005 Plan have been duly authorized, and, when issued in accordance with the provisions of the 2005 Plan, will be validly issued, fully paid and non-assessable.

We hereby consent to the filing of this opinion as an exhibit to the Registration Statement and to the use of our name wherever it appears in said Registration Statement. In giving such consent, we do not consider that we are "experts" within the meaning of such term as used in the Securities Act of 1933, as amended, or the rules and regulations of the Securities and Exchange Commission issued thereunder with respect to any part of the Registration Statement, including this opinion, as an exhibit or otherwise.

Very truly yours,

EPSTEIN BECKER & GREEN, P.C.

By: /s/ Theodore L. Polin

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Theodore L. Polin, Esq.

**CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM**

We consent to the incorporation by reference in this Registration Statement on Form S-8 of our report dated April 12, 2005 (July 27, 2005 as to the ninth paragraph of Note 1), related to the financial statements of Atricure, Inc. as of December 31, 2004 and 2003, and for each of the three years in the period ended December 31, 2004, and contained in Amendment No. 5 to Registration Statement No. 333-124197 of Atricure, Inc. on Form S-1 under the Securities Act of 1933.

/s/ Deloitte & Touche LLP

Cincinnati, Ohio  
January 9, 2006