

**STATEMENT OF CHANGES IN BENEFICIAL OWNERSHIP**

Check this box if no longer subject to Section 16. Form 4 or Form 5 obligations may continue. See Instruction 1(b).

Filed pursuant to Section 16(a) of the Securities Exchange Act of 1934 or Section 30(h) of the Investment Company Act of 1940

OMB APPROVAL	
OMB Number:	3235-0287
Estimated average burden hours per response:	0.5

1. Name and Address of Reporting Person* <u>Preiss Frederick</u>  (Last) (First) (Middle) 6217 CENTRE PARK DRIVE  (Street) WEST CHESTER OH 45069  (City) (State) (Zip)	2. Issuer Name and Ticker or Trading Symbol <u>AtriCure, Inc. [ ATRC ]</u>	5. Relationship of Reporting Person(s) to Issuer (Check all applicable)  Director 10% Owner X Officer (give title below) Other (specify below) <u>Vice President Operations</u>
	3. Date of Earliest Transaction (Month/Day/Year) 02/09/2011	
		6. Individual or Joint/Group Filing (Check Applicable Line) X Form filed by One Reporting Person Form filed by More than One Reporting Person

**Table I - Non-Derivative Securities Acquired, Disposed of, or Beneficially Owned**

1. Title of Security (Instr. 3)	2. Transaction Date (Month/Day/Year)	2A. Deemed Execution Date, if any (Month/Day/Year)	3. Transaction Code (Instr. 8)		4. Securities Acquired (A) or Disposed Of (D) (Instr. 3, 4 and 5)			5. Amount of Securities Beneficially Owned Following Reported Transaction(s) (Instr. 3 and 4)	6. Ownership Form: Direct (D) or Indirect (I) (Instr. 4)	7. Nature of Indirect Beneficial Ownership (Instr. 4)
			Code	V	Amount	(A) or (D)	Price			
Common Stock	02/09/2011		A		7,500	A	\$0 <sup>(1)</sup>	36,982	D	
Common Stock	02/09/2011		A		13,000	A	\$0 <sup>(2)</sup>	49,982	D	
Common Stock	02/09/2011		F		4,006 <sup>(3)</sup>	D	\$11.2	45,976	D	

**Table II - Derivative Securities Acquired, Disposed of, or Beneficially Owned (e.g., puts, calls, warrants, options, convertible securities)**

1. Title of Derivative Security (Instr. 3)	2. Conversion or Exercise Price of Derivative Security	3. Transaction Date (Month/Day/Year)	3A. Deemed Execution Date, if any (Month/Day/Year)	4. Transaction Code (Instr. 8)		5. Number of Derivative Securities Acquired (A) or Disposed of (D) (Instr. 3, 4 and 5)		6. Date Exercisable and Expiration Date (Month/Day/Year)		7. Title and Amount of Securities Underlying Derivative Security (Instr. 3 and 4)	8. Price of Derivative Security (Instr. 5)	9. Number of derivative Securities Beneficially Owned Following Reported Transaction(s) (Instr. 4)	10. Ownership Form: Direct (D) or Indirect (I) (Instr. 4)	11. Nature of Indirect Beneficial Ownership (Instr. 4)	
				Code	V	(A)	(D)	Date Exercisable	Expiration Date						Title
Stock Option (Right to Buy)	\$11.2	02/09/2011		A		11,000		02/09/2012 <sup>(4)</sup>	02/09/2021	Common Stock	11,000	(5)	11,000	D	

**Explanation of Responses:**

- Mr. Preiss acquired these shares pursuant to a Restricted Stock Award under the AtriCure, Inc. 2005 Equity Incentive Plan. The shares will vest 25% annually over four years from date of award.
- Mr. Preiss acquired these shares pursuant to the vesting and release of a Performance Share Award under the AtriCure, Inc. 2005 Equity Incentive Plan. The award had both a Company performance goal and a service period requirement, which were both met. Vesting was approved by the Compensation Committee of the Board of Directors on February 9, 2011.
- Mr. Preiss has elected to transfer 4,006 shares to the Company to satisfy the tax withholding obligation incurred upon the vesting and release of shares acquired pursuant to a Performance Share Award.
- The option vests and is exercisable as to 25% of the shares one year from the date of grant and the remaining 75% thereafter vests and is exercisable in equal monthly installments on the same day of the month over the following three years.
- Not applicable

/s/ Frederick Preiss 02/10/2011

\*\* Signature of Reporting Person Date

Reminder: Report on a separate line for each class of securities beneficially owned directly or indirectly.

\* If the form is filed by more than one reporting person, see Instruction 4 (b)(v).

\*\* Intentional misstatements or omissions of facts constitute Federal Criminal Violations See 18 U.S.C. 1001 and 15 U.S.C. 78ff(a).

Note: File three copies of this Form, one of which must be manually signed. If space is insufficient, see Instruction 6 for procedure.

Persons who respond to the collection of information contained in this form are not required to respond unless the form displays a currently valid OMB Number.