

AtriCure, Inc.  
Form SC 13G/A  
January 22, 2015

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

SCHEDULE 13G

Under the Securities Exchange Act of 1934  
(Amendment No. 2\*)

(Name of Issuer)  
ATRICURE INC

(Title of Class of Securities)  
Common Stock

(CUSIP Number)  
04963C209

Check the following box if a fee is being paid with this statement.  
(A fee is not required only if the filing person: (1) has a previous statement on file reporting beneficial ownership of more than five percent of the class of securities described in Item 1; and (2) has filed no amendment subsequent thereto reporting beneficial ownership of five percent or less of such class.) (See Rule 13d-7).

\*The remainder of this cover page shall be filled out for a reporting persons initial filing on this form with respect to the subject class of securities, and for any subsequent amendment containing information which would alter the disclosures provided in a prior cover page.

The information required in the remainder of this cover page shall not be deemed to be filed for the purpose of Section 18 of the Securities Exchange Act of 1934 (Act) or otherwise subject to the liabilities of that section of the Act but shall be subject to all other provisions of the Act (however, see the Notes).

- 1 NAME OF REPORTING PERSON S.S. OR I.R.S. IDENTIFICATION NO. OF PERSON  
THOMSON HORSTMANN & BRYANT, INC.  
22-3508647
- 2 CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP\*  
N/A
- 3 SEC USE ONLY

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- 4 CITIZENSHIP OR PLACE OF ORGANIZATION  
A DELAWARE CORPORATION  
NORWALK, CT 06851
- 5 SOLE VOTING POWER  
0
- 6 SHARED VOTING POWER  
449450
- 7 SOLE DISPOSITIVE POWER  
885940
- 8 SHARED DISPOSITIVE POWER  
NONE
- 9 AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON  
885940
- 10 CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (9) EXCLUDES CERTAIN SHARES\*  
N/A
- 11 PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW 9  
3.19%
- 12 TYPE OF REPORTING PERSON \*  
IA

ITEM 1.

- (A) ATRICURE INC  
(B) 6217 CENTRE PARK DRIVWEST CHESTER OH 45069

ITEM 2.

- (A) THOMSON HORSTMANN & BRYANT, INC.  
(B) 501 MERRITT 7, NORWALK, CT 06851  
(C) A DELAWARE CORPORATION  
(D) COMMON  
(E) 872391107

ITEM 3.

- (E) INVESTMENT ADVISER REGISTERED UNDER SECTION  
203 OF THE INVESTMENT ADVISERS ACT OF 1940

ITEM 4.

- (A) 885940  
(B) 3.19  
(C) (I) 0  
(II) 449450  
(III) 885940  
(IV) NONE

ITEM 5. N/A

ITEM 6. N/A

ITEM 7. N/A

ITEM 8. N/A

ITEM 9. N/A

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ITEM 10. CERTIFICATION

By signing below I certify that, to the best of my knowledge and belief, the securities referred to above were acquired in the ordinary course of business and were not acquired for the purpose of and do not have the effect of changing or influencing the control of the issuer of such securities and were not acquired in connection with or as a participant in any transaction having such purposes or effect.

SIGNATURE

After reasonable inquiry and to the best of my knowledge and belief, I certify that the information set forth in this statement is true, complete and correct.

James Kennedy  
Date: 1/21/15