

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

SCHEDULE 13G

Under the Securities Exchange Act of 1934

**AtriCure, Inc.**  
(Name of Issuer)

**Common Stock, \$.001 par value**  
(Title of Class of Securities)

**04963C209**  
(CUSIP Number)

**December 31, 2016**  
(Date of Event which Requires Filing of this Statement)

Check the appropriate box to designate the rule pursuant to which this Schedule is filed:

- Rule 13d-1(b)  
 Rule 13d-1(c)  
 Rule 13d-1(d)

\* The remainder of this cover page shall be filled out for a reporting person's 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 Instructions).

CUSIP No.: 04963C209

1	<b>NAME OF REPORTING PERSON</b> Consonance Capital Management LP <b>I.R.S. IDENTIFICATION NO. OF ABOVE PERSON (ENTITIES ONLY)</b>
2	<b>CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP</b> (a) <input type="checkbox"/> (b) <input type="checkbox"/>
3	<b>SEC USE ONLY</b>
4	<b>CITIZENSHIP OR PLACE OF ORGANIZATION</b> Delaware USA
<b>NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH</b>	5 <b>SOLE VOTING POWER</b>
	6 <b>SHARED VOTING POWER</b> 2,606,354
	7 <b>SOLE DISPOSITIVE POWER</b>
	8 <b>SHARED DISPOSITIVE POWER</b> 2,606,354
9	<b>AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON</b> 2,606,354
10	<b>CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (9) EXCLUDES CERTAIN SHARES</b> <input type="checkbox"/>
11	<b>PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (9)</b> 7.84% - Based on 33,239,964 shares of common stock outstanding as of October 26, 2016. as reported in the Issuers Form 10-Q filed with the SEC on October 26, 2016.
12	<b>TYPE OF REPORTING PERSON</b> IA, PN

CUSIP No.: 04963C209

1	<b>NAME OF REPORTING PERSON</b> Consonance Capital Opportunity Fund Management LP <b>I.R.S. IDENTIFICATION NO. OF ABOVE PERSON (ENTITIES ONLY)</b>
2	<b>CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP</b> (a) <input type="checkbox"/> (b) <input type="checkbox"/>
3	<b>SEC USE ONLY</b>
4	<b>CITIZENSHIP OR PLACE OF ORGANIZATION</b> Delaware, USA
<b>NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH</b>	5 <b>SOLE VOTING POWER</b>
	6 <b>SHARED VOTING POWER</b> 60,000
	7 <b>SOLE DISPOSITIVE POWER</b>
	8 <b>SHARED DISPOSITIVE POWER</b> 60,000
9	<b>AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON</b> 60,000
10	<b>CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (9) EXCLUDES CERTAIN SHARES</b> <input type="checkbox"/>
11	<b>PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (9)</b> 0.18% - Based on 33,239,964 shares of common stock outstanding as of October 26, 2016. as reported in the Issuers Form 10-Q filed with the SEC on October 26, 2016.
12	<b>TYPE OF REPORTING PERSON</b> IA, PN

CUSIP No.: 04963C209

1	<b>NAME OF REPORTING PERSON</b> Mitchell Blutt <b>I.R.S. IDENTIFICATION NO. OF ABOVE PERSON (ENTITIES ONLY)</b>	
2	<b>CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP</b> (a) <input type="checkbox"/> (b) <input type="checkbox"/>	
3	<b>SEC USE ONLY</b>	
4	<b>CITIZENSHIP OR PLACE OF ORGANIZATION</b> USA	
<b>NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH</b>	5	<b>SOLE VOTING POWER</b>
	6	<b>SHARED VOTING POWER</b> 2,666,354
	7	<b>SOLE DISPOSITIVE POWER</b>
	8	<b>SHARED DISPOSITIVE POWER</b> 2,666,354
9	<b>AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON</b> 2,666,354	
10	<b>CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (9) EXCLUDES CERTAIN SHARES</b> <input type="checkbox"/>	
11	<b>PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (9)</b> 8.02% - Based on 33,239,964 shares of common stock outstanding as of October 26, 2016. as reported in the Issuers Form 10-Q filed with the SEC on October 26, 2016.	
12	<b>TYPE OF REPORTING PERSON</b> HC, IN	

CUSIP No.: 04963C209

1	<b>NAME OF REPORTING PERSON</b> Consonance Capman GP LLC <b>I.R.S. IDENTIFICATION NO. OF ABOVE PERSON (ENTITIES ONLY)</b>
2	<b>CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP</b> (a) <input type="checkbox"/> (b) <input type="checkbox"/>
3	<b>SEC USE ONLY</b>
4	<b>CITIZENSHIP OR PLACE OF ORGANIZATION</b> Delaware USA
<b>NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH</b>	5 <b>SOLE VOTING POWER</b>
	6 <b>SHARED VOTING POWER</b> 2,666,354
	7 <b>SOLE DISPOSITIVE POWER</b>
	8 <b>SHARED DISPOSITIVE POWER</b> 2,666,354
9	<b>AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON</b> 2,666,354
10	<b>CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (9) EXCLUDES CERTAIN SHARES</b> <input type="checkbox"/>
11	<b>PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (9)</b> 8.02% - Based on 33,239,964 shares of common stock outstanding as of October 26, 2016. as reported in the Issuers Form 10-Q filed with the SEC on October 26, 2016.
12	<b>TYPE OF REPORTING PERSON</b> HC, OO

CUSIP No.: 04963C209

**ITEM 1(a). NAME OF ISSUER:**

AtriCure, Inc.

**ITEM 1(b). ADDRESS OF ISSUER'S PRINCIPAL EXECUTIVE OFFICES:**

7555 INNOVATION WAY  
MASON OH 45040

**ITEM 2(a). NAME OF PERSON FILING:**

Consonance Capital Management LP  
Consonance Capital Opportunity Fund Management LP  
Mitchell Blutt  
Consonance Capman GP LLC

**ITEM 2(b). ADDRESS OF PRINCIPAL BUSINESS OFFICE OR, IF NONE, RESIDENCE:**

1370 Avenue of the Americas  
Suite 3301  
New York, NY 10019

**ITEM 2(c). CITIZENSHIP:**

Delaware USA  
Delaware, USA  
USA  
Delaware USA

**ITEM 2(d). TITLE OF CLASS OF SECURITIES:**

Common Stock, \$.001 par value

**ITEM 2(e). CUSIP NUMBER:**

04963C209

**ITEM 3. IF THIS STATEMENT IS FILED PURSUANT TO SECTION 240.13d-1(b), or 13d-2(b) or (c) CHECK WHETHER THE PERSON FILING IS A:**

- (a)  Broker or dealer registered under Section 15 of the Act (15 U.S.C. 78c);
- (b)  Bank as defined in Section 3(a)(6) of the Act (15 U.S.C. 78c);
- (c)  Insurance company as defined in Section 3(a)(19) of the Act (15 U.S.C. 78c);
- (d)  Investment company registered under Section 8 of the Investment Company Act of 1940 (15 U.S.C. 80a-8);
- (e)  An investment adviser in accordance with 240.13d-1(b)(1)(ii)(E);
- (f)  An employee benefit plan or endowment fund in accordance with 240.13d-1(b)(1)(ii)(F);
- (g)  A parent holding company or control person in accordance with 240.13d-1(b)(1)(ii)(G);
- (h)  A savings associations as defined in Section 3(b) of the Federal Deposit Insurance Act (12 U.S.C. 1813);
- (i)  A church plan that is excluded from the definition of an investment company under Section 3(c)(14) of the Investment Company Act of 1940 (15 U.S.C. 80a-3);
- (j)  A non-U.S. institution in accordance with 240.13d-1(b)(1)(ii)(J);
- (k)  Group, in accordance with 240.13d-1(b)(1)(ii)(K). If filing as a non-U.S. institution in accordance with 240.13d-1(b)(1)(ii)(J), please specify the type of institution:

**ITEM 4. OWNERSHIP**

**(a) Amount beneficially owned:**

Consonance Capital Management LP 2,606,354  
Consonance Capital Opportunity Fund Management LP 60,000  
Mitchell Blutt 2,666,354  
Consonance Capman GP LLC 2,666,354

**(b) Percent of class:**

Consonance Capital Management LP 7.84%  
Consonance Capital Opportunity Fund Management LP 0.18%  
Mitchell Blutt 8.02%

Based on 33,239,964 shares of common stock outstanding as of October 26, 2016.  
as reported in the Issuers Form 10-Q filed with the SEC on October 26, 2016.

**(c) Number of shares as to which the person has:**

(i) sole power to vote or to direct the vote:

(ii) shared power to vote or to direct the vote:

Consonance Capital Management LP - 2,606,354  
Consonance Capital Opportunity Fund Management LP - 60,000  
Mitchell Blutt - 2,666,354  
Consonance Capman GP LLC - 2,666,354

(iii) sole power to dispose or direct the disposition of:

(iv) shared power to dispose or to direct the disposition of:

Consonance Capital Management LP - 2,606,354  
Consonance Capital Opportunity Fund Management LP - 60,000  
Mitchell Blutt - 2,666,354  
Consonance Capman GP LLC - 2,666,354

**ITEM 5. OWNERSHIP OF FIVE PERCENT OR LESS OF A CLASS:**

If this statement is being filed to report the fact that as of the date hereof the reporting person has ceased to be the beneficial owner of more than five percent of the class of securities, check the following [ ] .

**ITEM 6. OWNERSHIP OF MORE THAN FIVE PERCENT ON BEHALF OF ANOTHER PERSON:**

The ownership information in Item 4 is incorporated herein by reference.

**ITEM 7. IDENTIFICATION AND CLASSIFICATION OF THE SUBSIDIARY WHICH ACQUIRED THE SECURITY BEING REPORTED ON BY THE PARENT HOLDING COMPANY:**

Not applicable.

**ITEM 8. IDENTIFICATION AND CLASSIFICATION OF MEMBERS OF THE GROUP:**

Not applicable.

**ITEM 9. NOTICE OF DISSOLUTION OF GROUP:**

Not applicable.

**ITEM 10. CERTIFICATION:**

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

CUSIP No.: 04963C209

## 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.

February 10 2017

Consonance Capital Management LP

By: Consonance Capman GP LLC /s/ Mitchell Blutt

Name: Mitchell Blutt

Title: Manager & Member

February 10 2017

Consonance Capital Opportunity Fund Management LP

By: Consonance Capman GP LLC /s/ Mitchell Blutt

Name: Mitchell Blutt

Title: Manager & Member

February 10 2017

Consonance Capital Management LP

By: Consonance Capman GP LLC /s/ Mitchell Blutt

Name: Mitchell Blutt

Title: Manager & Member

February 10 2017

Consonance Capman GP LLC

By: /s/ Mitchell Blutt

Name: Mitchell Blutt

Title: Manager & Member

Attention — Intentional misstatements or omissions of fact constitute Federal criminal violations (See 18 U.S.C. 1001).



CUSIP No.: 04963C209

Item 4. Ownership:

Consonance Capital Master Account LP (Consonance Master) directly holds 2,606,354 shares of the Issuers Common Stock (the Master Account Shares). Consonance Capital Management LP (the Adviser) is the investment adviser of Consonance Master, and pursuant to an investment advisory agreement (the Advisory Agreement), the Adviser exercises voting and investment power over the Master Account Shares held by Consonance Master. Consonance Capman GP LLC (Capman) is the general partner of the Adviser and Mitchell Blutt, as the Manager & Member of Capman and Chief Executive Officer of the Adviser, may be deemed to control Capman and the Adviser. Each of the Adviser, Capman and Mr. Blutt may be deemed to beneficially own the Master Account Shares, but neither the filing of this Schedule 13G nor any of its contents shall be deemed to constitute an admission that any of the Adviser, Capman or Mr. Blutt is the beneficial owner of the Master Account Shares for purposes of Section 13(d) of the Securities Exchange Act of 1934, as amended, or for any other purpose.

A managed account managed by Consonance Capital Opportunity Fund Management LP (Consonance Opportunity) directly holds 60,000 shares of the Issuers Common Stock (the Managed Account Shares). Capman is the general partner of Consonance Opportunity and Mitchell Blutt, as the Manager & Member of Capman, may be deemed to control Capman and Consonance Opportunity. Each of Consonance Opportunity, Capman and Mr. Blutt may be deemed to beneficially own the Managed Account Shares, but neither the filing of this Schedule 13G nor any of its contents shall be deemed to constitute an admission that any of Consonance Opportunity, Capman or Mr. Blutt is the beneficial owner of the Managed Account Shares for purposes of Section 13(d) of the Securities Exchange Act of 1934, as amended, or for any other purpose.

JOINT FILING AGREEMENT

In accordance with Rule 13d-1(k)(1) under the Securities Exchange Act of 1934, as amended, the persons named below agree to the joint filing on behalf of each of them of a Statement on Schedule 13G dated February 10, 2017 (including amendments thereto) with respect to the Common Stock, par value \$0.001 per share, of ATRICURE INC. This Joint Filing Agreement shall be filed as an Exhibit to such Statement. The undersigned acknowledge that each shall be responsible for the timely filing of any amendments to such joint filing and for the completeness and accuracy of the information concerning him or it contained herein and therein, but shall not be responsible for the completeness and accuracy of the information concerning the others.

CONSONANCE CAPITAL MANAGEMENT LP

By: Consonance Capman GP LLC

By: /s/ Mitchell Blutt

Name: Mitchell Blutt

Title: Manager & Member

CONSONANCE CAPMAN GP LLC

By: /s/ Mitchell Blutt

Name: Mitchell Blutt

Title: Manager & Member

/s/ Mitchell Blutt

MITCHELL BLUTT