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

SCHEDULE 13G

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

AtriCure, Inc.
(Name of Issuer)

Common Stock
(Title of Class of Securities)

04963C209
(CUSIP Number)

December 31, 2015
(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 disclosures provided in a prior cover page.

The information required on 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.	NAMES OF REPORTING PERSONS RS Investment Management Co. LLC I.R.S. IDENTIFICATION NOS. OF ABOVE PERSONS (ENTITIES ONLY) 943321067	
2.	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP (see instructions) (a) <input type="checkbox"/> (b) <input type="checkbox"/>	
3.	SEC USE ONLY	
4.	CITIZENSHIP OR PLACE OF ORGANIZATION Delaware	
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH	5.	SOLE VOTING POWER 2,592,512
	6.	SHARED VOTING POWER
	7.	SOLE DISPOSITIVE POWER 2,679,551
	8.	SHARED DISPOSITIVE POWER
9.	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON 2,679,551	
10.	CHECK IF THE AGGREGATE AMOUNT IN ROW (9) EXCLUDES CERTAIN SHARES (see instructions) <input type="checkbox"/>	
11.	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (9) 8.32%	
12.	TYPE OF REPORTING PERSON (see instructions) IA	

Item 1.

- (a) Name of Issuer
AtriCure, Inc.
- (b) Address of Issuer's Principal Executive Offices
6033 Schumaker Park Drive
West Chester, OH 45069

Item 2.

- (a) Name of Persons Filing
RS Investment Management Co. LLC
- (b) Address of the Principal Office or, if none, residence
6 One Bush Street, Suite 900
San Francisco, CA 94104
- (c) Citizenship
Delaware
- (d) Title of Class of Securities
Common Stock
- (e) CUSIP Number
04963C209

Item 3. If this statement is filed pursuant to §§240.13d-1(b) or 240.13d-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. 78o).
- (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) Group, in accordance with §240.13d-1(b)(1)(ii)(J).

Item 4. Ownership.

Provide the following information regarding the aggregate number and percentage of the class of securities of the issuer identified in Item 1.

- (a) Amount beneficially owned: 2,679,551
- (b) Percent of class: 8.32%
- (c) Number of shares as to which the person has:
 - (i) Sole power to vote or to direct the vote 2,592,512.
 - (ii) Shared power to vote or to direct the vote 0.
 - (iii) Sole power to dispose or to direct the disposition of 2,679,551.
 - (iv) Shared power to dispose or to direct the disposition of 0.

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 clients of RS Investment Management Co. LLC, including investment companies registered under the Investment Company Act of 1940 and separately managed accounts, have the right to receive or the power to direct the receipt of dividends from, or the proceeds from the sale of, the common stock of AtriCure, Inc. RS Small Cap Growth Fund, an investment company registered under the Investment Company Act of 1940, has an interest of 1,829,528, or 5.68%, of the class of securities reported herein.

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.

- (a) The following certification shall be included if the statement is filed pursuant to §240.13d-1(b):

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.

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.

02/09/2016

Date

/s/ Randall Hegarty

Signature

Randall Hegarty / Chief Compliance Officer

Name/Title