
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

POST-EFFECTIVE AMENDMENT NO. 2 TO
FORM S-3
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)

7555 Innovation Way
Mason, Ohio 45040
(513) 755-4100
(Address, including zip code, and telephone number, including area
code, of registrant's principal executive offices)

34-1940305
(IRS Employer Identification
Number)

F. Mark Reuter, Esq.
Keating Muething & Klekamp PLL
One East Fourth Street, Suite 1400
Cincinnati, Ohio 45202
Telephone: (513) 579-6469
Facsimile: (513) 579-6457
(Name, Address and Telephone Number of Agent for Service)

Approximate date of commencement of proposed sale to the public: From time to time after the effective date of this Registration Statement as determined by market conditions and other factors.

If the only securities being registered on this Form are being offered pursuant to dividend or interest reinvestment plans, please check the following box.

If any of the securities being registered on this Form are to be offered on a delayed or continuous basis pursuant to Rule 415 under the Securities Act of 1933, other than securities offered only in connection with dividend or interest reinvestment plans, check the following box.

If this Form is filed to register additional securities for an offering pursuant to Rule 462(b) under the Securities Act, please check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering.

If this Form is a post-effective amendment filed pursuant to Rule 462(c) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering.

If this Form is a registration statement pursuant to General Instruction I.D. or a post-effective amendment thereto that shall become effective upon the filing with the Commission pursuant to Rule 462(e) under the Securities Act, check the following box.

If this Form is a post-effective amendment to a registration statement filed pursuant to General Instruction I.D. filed to register additional securities or additional classes of securities pursuant to Rule 413(b) under the Securities Act, check the following box.

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, or a smaller reporting company. See the definitions of "large accelerated filer," "accelerated filer" and "smaller reporting company" in Rule 12b-2 of the Exchange Act.

Large accelerated filer Accelerated filer
Non-accelerated filer (Do not check if a smaller reporting company) Smaller reporting company

*Note: The worldwide market value of the registrant's outstanding voting and non-voting common equity held by non-affiliates on September 21, 2015 exceeded \$700 million.

DEREGISTRATION OF SECURITIES

This Post-Effective Amendment relates to the Registration Statement on Form S-3 (Registration No. 333-207916) filed on November 10, 2015, pertaining to Debt Securities, Preferred Stock, Common Stock, Depositary Shares, Warrants, and Units of AtriCure, Inc.

The undersigned Registrant hereby removes and withdraws from registration all securities registered pursuant to this Registration Statement which remain unissued and unsold.

SIGNATURES

Pursuant to the requirements of the Securities Act of 1933, as amended, and Rule 478 thereunder, the Registrant has duly caused this Post-Effective Amendment to be signed on its behalf by the undersigned, thereunto duly authorized, in the City of Mason, Ohio, as of the 23rd day of June, 2016.

ATRICURE, INC.

By: /s/ M. Andrew Wade
M. Andrew Wade,
Senior Vice President and
Chief Financial Officer