AXCELIS TECHNOLOGIES INC Form SC 13D September 16, 2014

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

SCHEDULE 13D (Rule 13d-101)

INFORMATION TO BE INCLUDED IN STATEMENTS FILED PURSUANT TO § 240.13d-1(a) AND AMENDMENTS THERETO FILED PURSUANT TO § 240.13d-2(a)

(Amendment No.)1

Axcelis Technologies, Inc.

(Name of Issuer)

Common Stock, \$0.001 par value per share (Title of Class of Securities)

> 054540109 (CUSIP Number)

ERIC SINGER VERTEX CAPITAL ADVISORS, LLC 825 Third Avenue, 33rd Floor New York, New York 10022

STEVE WOLOSKY, ESQ. OLSHAN FROME WOLOSKY LLP Park Avenue Tower 65 East 55th Street New York, New York 10022 (212) 451-2300 (Name, Address and Telephone Number of Person Authorized to Receive Notices and Communications)

September 15, 2014 (Date of Event Which Requires Filing of This Statement)

If the filing person has previously filed a statement on Schedule 13G to report the acquisition that is the subject of this Schedule 13D, and is filing this schedule because of §§ 240.13d-1(e), 240.13d-1(f) or 240.13d-1(g), check the following box ".

Note: Schedules filed in paper format shall include a signed original and five copies of the schedule, including all exhibits. See § 240.13d-7 for other parties to whom copies are to be sent.

1 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	NAME OF REPORTING PERSON					
2	Vertex Opportunities Fund, LP CHECK THE APPROPRIATE BOX IF A MEMBER OF A (a) o GROUP (b) o					
3	SEC USE ONL	.Y				
4	SOURCE OF F	FUNDS				
5	WC CHECK BOX IF DISCLOSURE OF LEGAL PROCEEDINGS " IS REQUIRED PURSUANT TO ITEM 2(d) OR 2(e)					
6	CITIZENSHIP	OR PLACE OF	ORGANIZATION			
NUMBER OF SHARES	DELAWARE	7	SOLE VOTING POWER			
BENEFICIALLY OWNED BY EACH		8	798,135 SHARED VOTING POWER			
REPORTING PERSON WITH		9	-0- SOLE DISPOSITIVE POWER			
		10	798,135 SHARED DISPOSITIVE POWE	R		
11	-0- AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON					
12	798,135 CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (11) o EXCLUDES CERTAIN SHARES					
13	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (11)					
14	Less than 1% TYPE OF REPORTING PERSON					
	PN					

1	NAME OF REPORTING PERSON				
2	Vertex Special Opportunities Fund II, LP CHECK THE APPROPRIATE BOX IF A MEMBER OF A (a) o GROUP (b) o				
3	SEC USE ONL	.Y			
4	SOURCE OF FUNDS				
5	WC, OO CHECK BOX IF DISCLOSURE OF LEGAL PROCEEDINGS " IS REQUIRED PURSUANT TO ITEM 2(d) OR 2(e)				
6	CITIZENSHIP OR PLACE OF ORGANIZATION				
NUMBER OF SHARES	DELAWARE	7	SOLE VOTING POWER		
BENEFICIALLY OWNED BY EACH		8	6,428,766 SHARED VOTING POWER		
REPORTING PERSON WITH		9	-0- SOLE DISPOSITIVE POWER		
		10	6,428,766 SHARED DISPOSITIVE POWE	R	
11	AGGREGATE	AMOUNT BEN	-0- EFICIALLY OWNED BY EACH	REPORTING PERSON	
12	6,428,766 CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (11) o EXCLUDES CERTAIN SHARES				
13	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (11)				
14	5.8% TYPE OF REPORTING PERSON				
	PN				

1	NAME OF REPORTING PERSON				
2 3	Vertex GP, LLC CHECK THE APPROPRIATE BOX IF A MEMBER OF A (a) o GROUP (b) o SEC USE ONLY				
4	SOURCE OF F	UNDS			
·	So chel of 1	0100			
5	OO CHECK BOX IF DISCLOSURE OF LEGAL PROCEEDINGS " IS REQUIRED PURSUANT TO ITEM 2(d) OR 2(e)				
6	CITIZENSHIP OR PLACE OF ORGANIZATION				
NUMBER OF SHARES	DELAWARE	7	SOLE VOTING POWER		
BENEFICIALLY OWNED BY EACH		8	798,135 SHARED VOTING POWER		
REPORTING PERSON WITH					
		10	798,135 SHARED DISPOSITIVE POWE	R	
11	-0- AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON				
12	798,135 CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (11) o EXCLUDES CERTAIN SHARES				
13	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (11)				
14	Less than 1% TYPE OF REPORTING PERSON				
	00				

1	NAME OF REPORTING PERSON				
2	Vertex Special Opportunities GP II, LLC CHECK THE APPROPRIATE BOX IF A MEMBER OF A (a) o GROUP (b) o				
3	SEC USE ONL	.Υ			
4	SOURCE OF F	FUNDS			
5	OO CHECK BOX IF DISCLOSURE OF LEGAL PROCEEDINGS " IS REQUIRED PURSUANT TO ITEM 2(d) OR 2(e)				
6	CITIZENSHIP OR PLACE OF ORGANIZATION				
NUMBER OF SHARES	DELAWARE	7	SOLE VOTING POWER		
BENEFICIALLY OWNED BY EACH		8	6,428,766 SHARED VOTING POWER		
REPORTING PERSON WITH		9	-0- SOLE DISPOSITIVE POWER		
		10	6,428,766 SHARED DISPOSITIVE POWE	R	
11	-0- AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON				
12	6,428,766 CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (11) o EXCLUDES CERTAIN SHARES				
13	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (11)				
14	5.8% TYPE OF REPORTING PERSON				
	00				

1	NAME OF REPORTING PERSON				
2	Vertex Capital Advisors, LLC CHECK THE APPROPRIATE BOX IF A MEMBER OF A (a) o GROUP (b) o				
3	SEC USE ONL	.Υ			
4	SOURCE OF F	FUNDS			
5	OO CHECK BOX IF DISCLOSURE OF LEGAL PROCEEDINGS " IS REQUIRED PURSUANT TO ITEM 2(d) OR 2(e)				
6	CITIZENSHIP	OR PLACE OF	ORGANIZATION		
NUMBER OF SHARES	DELAWARE	7	SOLE VOTING POWER		
BENEFICIALLY OWNED BY EACH		8	7,226,901 SHARED VOTING POWER		
REPORTING PERSON WITH		9	-0- SOLE DISPOSITIVE POWER		
		10	7,226,901 SHARED DISPOSITIVE POWE	R	
11	-0- AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON				
12	7,226,901 CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (11) o EXCLUDES CERTAIN SHARES				
13	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (11)				
14	6.5% TYPE OF REPORTING PERSON				
	IA				

1	NAME OF REPORTING PERSON					
2 3	Eric SingerCHECK THE APPROPRIATE BOX IF A MEMBER OF A(a) oGROUP(b) oSEC USE ONLY(b) o					
4	SOURCE OF F	UNDS				
5	OO CHECK BOX IF DISCLOSURE OF LEGAL PROCEEDINGS " IS REQUIRED PURSUANT TO ITEM 2(d) OR 2(e)					
6	CITIZENSHIP OR PLACE OF ORGANIZATION					
NUMBER OF SHARES	USA	7	SOLE VOTING POWER			
BENEFICIALLY OWNED BY EACH		8	7,226,901 SHARED VOTING POWER			
REPORTING PERSON WITH		9	-0- SOLE DISPOSITIVE POWER			
		10	7,226,901 SHARED DISPOSITIVE POWE	R		
11	AGGREGATE	AMOUNT BEN	-0- EFICIALLY OWNED BY EACH	REPORTING PERSON		
12	7,226,901 CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (11) o EXCLUDES CERTAIN SHARES					
13	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (11)					
14	6.5% TYPE OF REPORTING PERSON					
	IN					

CUSIP NO. 054540109

The following constitutes the Schedule 13D filed by the undersigned (the "Schedule 13D").

Item 1.

Security and Issuer.

This statement relates to the Common Stock, \$0.001 par value per share (the "Shares"), of Axcelis Technologies, Inc., a Delaware corporation (the "Issuer"). The address of the principal executive offices of the Issuer is 108 Cherry Hill Drive, Beverly, Massachusetts 01915.

Item 2.

Identity and Background.

(a) This statement is filed by:

- (i) Vertex Opportunities Fund, LP, a Delaware limited partnership ("Vertex Opportunities"), with respect to the Shares directly and beneficially owned by it;
- (ii) Vertex Special Opportunities Fund II, LP, a Delaware limited partnership ("VSO II"), with respect to the Shares directly and beneficially owned by it;
- (iv) Vertex GP, LLC, a Delaware limited liability company ("Vertex GP"), as the general partner of Vertex Opportunities;
- (v)Vertex Special Opportunities GP II, LLC, a Delaware limited liability company ("VSO GP II"), as the general partner of VSO II;
- (vii)Vertex Capital Advisors, LLC, a Delaware limited liability company ("Vertex Capital"), as the investment manager of each of Vertex Opportunities and VSO II; and
 - (viii) Eric Singer, as managing member of each of Vertex GP, VSO GP II and Vertex Capital.

Each of the foregoing is referred to as a "Reporting Person" and collectively as the "Reporting Persons." Each of the Reporting Persons is party to that certain Joint Filing Agreement as further described in Item 6. Accordingly, the Reporting Persons are hereby filing a joint Schedule 13D.

(b) The address of the principal office of each of the Reporting Persons is 825 Third Ave. 33rd Floor, New York, New York 10022.

(c) The principal business of Vertex Opportunities is investing in securities. The principal business of Vertex GP is acting as the general partner of Vertex Opportunities. The principal business of VSO II is investing in securities. The principal business of VSO GP II is acting as the general partner of VSO II. Vertex Capital is a registered investment advisor and serves as the investment manager to each of Vertex Opportunities and VSO II. The principal occupation of Mr. Singer is serving as the managing member of each of Vertex GP, VSO GP II and Vertex Capital.

(d) No Reporting Person has, during the last five years, been convicted in a criminal proceeding (excluding traffic violations or similar misdemeanors).

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(e) No Reporting Person has, during the last five years, been party to a civil proceeding of a judicial or administrative body of competent jurisdiction and as a result of such proceeding was or is subject to a judgment, decree or final order enjoining future violations of, or prohibiting or mandating activities subject to, federal or state securities laws or finding any violation with respect to such laws.

(f) Each of Vertex Opportunities, Vertex GP, VSO II, VSO GP II and Vertex Capital is organized under the laws of the State of Delaware. Mr. Singer is a citizen of the United States of America.

Item 3. Source and Amount of Funds or Other Consideration.

The Shares purchased by each of Vertex Opportunities and VSO II were purchased with working capital (which may, at any given time, include margin loans made by brokerage firms in the ordinary course of business) in open market purchases, except as otherwise noted, including certain Shares which were acquired as a result of capital contributions, as set forth in Schedule A, which is incorporated by reference herein. The aggregate purchase price of the 798,135 Shares beneficially owned by Vertex Opportunities is approximately \$1,280,046, excluding brokerage commissions. The aggregate price of the 6,428,766 Shares contributed to and beneficially owned by VSO II is approximately \$12,739,702, excluding brokerage commissions.

Item 4.

Purpose of Transaction.

The Reporting Persons acquired the Shares based on the Reporting Persons' belief that the Shares, when acquired, were undervalued and represented an attractive investment opportunity. Depending upon overall market conditions, other investment opportunities available to the Reporting Persons, and the availability of Shares at prices that would make the purchase or sale of Shares desirable, the Reporting Persons may endeavor to increase or decrease their position in the Issuer through, among other things, the purchase or sale of Shares on the open market or in private transactions or otherwise, on such terms and at such times as the Reporting Persons may deem advisable.

No Reporting Person has any present plan or proposal which would relate to or result in any of the matters set forth in subparagraphs (a) - (j) of Item 4 of Schedule 13D except as set forth herein or such as would occur upon or in connection with completion of, or following, any of the actions discussed herein. The Reporting Persons intend to review their investment in the Issuer on a continuing basis. Depending on various factors including, without limitation, the Issuer's financial position and investment strategy, the price levels of the Shares, conditions in the securities markets and general economic and industry conditions, the Reporting Persons may in the future take such actions with respect to their investment in the Issuer as they deem appropriate including, without limitation, engaging in communications with management and the Board of the Issuer, engaging in discussions with stockholders of the Issuer and others about the Issuer and the Reporting Persons' investment, making proposals to the Issuer concerning changes to the capitalization, ownership structure, board structure (including board composition) or operations of the Issuer, purchasing additional Shares, selling some or all of their Shares, engaging in short selling of or any hedging or similar transaction with respect to the Shares, or changing their intention with respect to any and all matters referred to in Item 4.

Item 5.

Interest in Securities of the Issuer.

The aggregate percentage of Shares reported owned by each Reporting Person is based upon 111,586,627 Shares outstanding, which is the total number of Shares outstanding as of July 29, 2014 as reported in the Issuer's Quarterly Report on Form 10-Q, filed with the Securities and Exchange Commission on August 8, 2014.

A.

Vetex Opportunities

(a) As of the close of business on September 15, 2014, Vertex Opportunities beneficially owned 798,135 Shares.

Percentage: Less than 1%

(b)

1. Sole power to vote or direct vote: 798,135

2. Shared power to vote or direct vote: -0-

3. Sole power to dispose or direct the disposition: 798,135

4. Shared power to dispose or direct the disposition: -0-

(c)The transactions in the Shares by Vertex Opportunities during the past sixty days, if any, are set forth in Schedule A and are incorporated herein by reference.

В.

VSO II

(a) As of the close of business on September 15, 2014, VSO II beneficially owned 6,428,766 Shares.

Percentage: Approximately 5.8%

(b)

1. Sole power to vote or direct vote: 6,428,766

2. Shared power to vote or direct vote: -0-

3. Sole power to dispose or direct the disposition: 6,428,766

4. Shared power to dispose or direct the disposition: -0-

(c)The transactions in the Shares by VSO II during the past sixty days, if any, are set forth in Schedule A and are incorporated herein by reference.

C.

Vertex GP

(a) Vertex GP, as the general partner of Vertex Opportunities, may be deemed the beneficial owner of the 798,135 shares owned by Vertex Opportunities.

Percentage: Less than 1%

(b)

1. Sole power to vote or direct vote: 798,135

2. Shared power to vote or direct vote: -0-

3. Sole power to dispose or direct the disposition: 798,135

4. Shared power to dispose or direct the disposition: -0-

(c) Vertex GP has not entered into any transactions in the Shares during the past sixty days. The transactions in the Shares on behalf of Vertex Opportunities during the past sixty days, if any, are set forth in Schedule A and are incorporated herein by reference.

D.

VSO GP II

(a) VSO GP II, as the general partner of VSO II, may be deemed the beneficial owner of the 6,428,766 shares owned by VSO II.

Percentage: Approximately 5.8%

(b)

1. Sole power to vote or direct vote: 6,428,766 2. Shared power to vote or direct vote: -0-

3. Sole power to dispose or direct the disposition: 6,428,766

4. Shared power to dispose or direct the disposition: -0-

(c) VSO GP II has not entered into any transactions in the Shares during the past sixty days. The transactions in the Shares on behalf of VSO II during the past sixty days, if any, are set forth in Schedule A and are incorporated herein by reference.

E.

Vertex Capital

(a) Vertex Capital, as the investment manager of Vertex Opportunities and VSO II, may be deemed the beneficial owner of the (i) 798,135 Shares owned by Vertex Opportunities and (ii) 6,428,766 Shares owned by VSO II.

Percentage: Approximately 6.5%

(b)

1. Sole power to vote or direct vote: 7,226,901

2. Shared power to vote or direct vote: -0-

- 3. Sole power to dispose or direct the disposition: 7,226,901
 - 4. Shared power to dispose or direct the disposition: -0-
- (c) Vertex Capital has not entered into any transactions in the Shares during the past sixty days. The transactions in the Shares on behalf of each of Vertex Opportunities and VSO II, during the past sixty days, if any, are set forth in Schedule A and are incorporated herein by reference.

F.

Eric Singer

(a)Mr. Singer, as the managing member of Vertex GP, VSO GP II and Vertex Capital, may be deemed the beneficial owner of the (i) 798,135 Shares owned by Vertex Opportunities and (ii) 6,428,766 Shares owned by VSO II.

Percentage: Approximately 6.5%

(b)

1. Sole power to vote or direct vote: 7,226,901

2. Shared power to vote or direct vote: -0-

3. Sole power to dispose or direct the disposition: 7,226,901

4. Shared power to dispose or direct the disposition: -0-

(c)Mr. Singer has not entered into any transactions in the Shares during the past sixty days. The transactions in the Shares on behalf of each of Vertex Opportunities and VSO II, during the past sixty days, if any, are set forth in Schedule A and are incorporated herein by reference.

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Each Reporting Person, as a member of a "group" with the other Reporting Persons for the purposes of Section 13(d)(3) of the Securities Exchange Act of 1934, as amended, may be deemed the beneficial owner of the Shares directly owned by the other Reporting Persons. Each Reporting Person disclaims beneficial ownership of such Shares except to the extent of his or its pecuniary interest therein.

(d) No person other than the Reporting Persons is known to have the right to receive, or the power to direct the receipt of dividends from, or proceeds from the sale of, the Shares.

(e)

Not applicable.

Item 6. Contracts, Arrangements, Understandings or Relationships With Respect to Securities of the Issuer.

On September 16, 2014 the Reporting Persons entered into a Joint Filing Agreement in which the Reporting Persons agreed to the joint filing on behalf of each of them of statements on Schedule 13D with respect to the securities of the Issuer to the extent required by applicable law. The Joint Filing Agreement is attached hereto as Exhibit 99.1 and is incorporated herein by reference.

Other than as described herein, there are no contracts, arrangements, understandings or relationships among the Reporting Persons, or between the Reporting Persons and any other person, with respect to the securities of the Issuer.

Item 7.

Material to be Filed as Exhibits.

99.1 Joint Filing Agreement by and among Vertex Opportunities Fund, LP, Vertex GP, LLC, Vertex Special Opportunities Fund II, LP, Vertex Special Opportunities GP II, LLC, Vertex Capital Advisors, LLC and Eric Singer, dated September 16, 2014.

SIGNATURES

After reasonable inquiry and to the best of his knowledge and belief, the undersigned certifies that the information set forth in this statement is true, complete and correct.

Dated: September 16, 2014

Vertex C	Opportunities Fund, LP	
By:	Vertex GP, LLC General Partner	
By:	/s/ Eric Singer Name: Title:	Eric Singer Managing Member
Vertex GF	P, LLC	
By:	/s/ Eric Singer Name: Title:	Eric Singer Managing Member
Vertex Sp	ecial Opportunities Fun	d II, LP
By:	Vertex Special C General Partner	opportunities GP II, LLC
By:	/s/ Eric Singer Name: Title:	Eric Singer Managing Member
Vertex Sp	ecial Opportunities GP	II, LLC
By:	/s/ Eric Singer Name: Title:	Eric Singer Managing Member
Vertex C	Capital Advisors, LLC	
By:	/s/ Eric Singer Name: Title:	Eric Singer Managing Member

/s/ Eric Singer Eric Singer

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SCHEDULE A

Transactions in Securities of the Issuer During the Past Sixty Days

Nature of the Transaction	Securities Purchased/(Sold)	Price Per Share(\$)	Date of Purchase / Sale
	VERTEX SPECIAL OPPOR	RTUNITIES FUND II, LP	
Capital Contribution	1,074,546	N/A	09/05/2014
Capital Contribution	5,354,220	N/A	09/15/2014