

AXCELIS TECHNOLOGIES INC

Form SC 13G/A

January 31, 2011

UNITED STATES

SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

SCHEDULE 13G/A

Under the Securities Exchange Act of 1934

(Amendment No.2)

Axcelis Technologies Inc.

(Name of Issuer)

Common Stock

(Title of Class of Securities)

054540109

(CUSIP Number)

12/31/10

(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 the Notes).

CUSIP No. 054540109

1. NAME OF REPORTING PERSON

S.S. or I.R.S. IDENTIFICATION NO. OF ABOVE PERSON

Sterling Capital Management LLC

42-1658828

2. CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP

Not Applicable

(a)

(b)

3. SEC USE ONLY

4. CITIZENSHIP OR PLACE OF ORGANIZATION

North Carolina

NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH:

5. SOLE VOTING POWER

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9645407

6. SHARED VOTING POWER

None

7. SOLE DISPOSITIVE POWER

9645407

8. SHARED DISPOSITIVE POWER

None

9. AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON

9645407

10. CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (9) EXCLUDES CERTAIN SHARES

Not Applicable

11. PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW 9

9.207%

12. TYPE OF REPORTING PERSON

IA

CUSIP No. 054540109

Item 1(a) Name of Issuer:

Axcelis Technologies Inc.

Item 1(b) Address of Issuer's Principal Executive Offices:

108 Cherry Hill Drive

Beverly, MA 01915

Item 2(a) Name of Person(s) Filing:

Sterling Capital Management LLC ("Sterling")

Item 2(b) Address of Principal Business Office:

Two Morrocroft Centre

4064 Colony Road, Suite 300

Charlotte, NC 28211

Item 2(c) Citizenship:

Sterling is a North Carolina limited liability company.

Item 2(d) Title of Class of Securities:

Common Stock (the "Stock")

Item 2(e) CUSIP Number:

054540109

Item 3 Type of Person:

(e) Sterling is an Investment Adviser registered under section 203 of the Investment Advisers Act of 1940, as amended.

Item 4 Ownership:

(a) Amount beneficially owned:

See Item 9 of Cover Pages.

(b) Percent of class:

See Item 11 of Cover Pages.

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

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

See Item 5 of Cover Pages.

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

See Item 6 of Cover Pages

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

See Item 7 of Cover Pages.

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

See Item 8 of Cover Pages.

Item 5 Ownership of Five Percent or Less of a Class:

Not Applicable

Item 6 Ownership of More than Five Percent on Behalf of Another Person:

Sterling is a registered investment adviser whose clients have the right to receive or the power to direct the receipt of dividends from, or the proceeds from the sale of, the Stock. None of these clients to the knowledge of Sterling beneficially owns more than 5% of the Stock.

Item 7 Identification and Classification of the Subsidiary Which Acquired the Security Being Reported on by the Parent Holding Company:

Sterling is an Investment Adviser registered under section 203 of the Investment Advisers Act of 1940, as amended.

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.

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.

Date: 1/31/2011

STERLING CAPITAL MANAGEMENT LLC

By: /s/ Kenneth R. Cotner

Kenneth R. Cotner

Executive Director and Chief Operating Officer