

BREWER KEVIN J  
 Form 4  
 December 10, 2010

**FORM 4**

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

OMB APPROVAL

OMB Number: 3235-0287  
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Check this box if no longer subject to Section 16. Form 4 or Form 5 obligations may continue. See Instruction 1(b).

**STATEMENT OF CHANGES IN BENEFICIAL OWNERSHIP OF SECURITIES**

Filed pursuant to Section 16(a) of the Securities Exchange Act of 1934, Section 17(a) of the Public Utility Holding Company Act of 1935 or Section 30(h) of the Investment Company Act of 1940

(Print or Type Responses)

1. Name and Address of Reporting Person \*  
 BREWER KEVIN J

2. Issuer Name and Ticker or Trading Symbol  
 AXCELIS TECHNOLOGIES INC  
 [ACLS]

5. Relationship of Reporting Person(s) to Issuer

(Check all applicable)

(Last) (First) (Middle)

3. Date of Earliest Transaction  
 (Month/Day/Year)  
 12/09/2010

\_\_\_\_ Director \_\_\_\_\_ 10% Owner  
 Officer (give title below) \_\_\_\_\_ Other (specify below)  
 EVP, Operations

C/O AXCELIS TECHNOLOGIES, INC., 108 CHERRY HILL DRIVE

(Street)

4. If Amendment, Date Original Filed(Month/Day/Year)

6. Individual or Joint/Group Filing(Check Applicable Line)  
 Form filed by One Reporting Person  
 Form filed by More than One Reporting Person

BEVERLY, MA 01915

(City) (State) (Zip)

**Table I - Non-Derivative Securities Acquired, Disposed of, or Beneficially Owned**

| 1. Title of Security (Instr. 3) | 2. Transaction Date (Month/Day/Year) | 2A. Deemed Execution Date, if any (Month/Day/Year) | 3. Transaction Code (Instr. 8) | 4. Securities Acquired (A) or Disposed of (D) (Instr. 3, 4 and 5) | 5. Amount of Securities Beneficially Owned Following Reported Transaction(s) (Instr. 3 and 4) | 6. Ownership Form: Direct (D) or Indirect (I) (Instr. 4) | 7. Nature of Ownership (Instr. 4) |
|---------------------------------|--------------------------------------|--|--------------------------------|---|---|--|-----------------------------------|
|                                 |                                      |  |                                | Code V Amount (A) or (D) Price                                    |   |  |                                   |
| Common Stock                    | 12/09/2010                           |  | S                              | 8,059 D \$ 3.003  | 95,808  | D  |                                   |
| Common Stock                    | 12/09/2010                           |  | S                              | 1,500 D \$ 3.01   | 94,308 <sup>(1)</sup>   | D  |                                   |

Reminder: Report on a separate line for each class of securities beneficially owned directly or indirectly.

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SEC 1474  
 (9-02)

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**Table II - Derivative Securities Acquired, Disposed of, or Beneficially Owned**  
(e.g., puts, calls, warrants, options, convertible securities)

| 1. Title of Derivative Security (Instr. 3) | 2. Conversion or Exercise Price of Derivative Security | 3. Transaction Date (Month/Day/Year) | 3A. Deemed Execution Date, if any (Month/Day/Year) | 4. Transaction Code (Instr. 8) | 5. Number of Derivative Securities Acquired (A) or Disposed of (D) (Instr. 3, 4, and 5) | 6. Date Exercisable and Expiration Date (Month/Day/Year) | 7. Title and Amount of Underlying Securities (Instr. 3 and 4) | 8. Price of Derivative Security (Instr. 5) | 9. Nu                      |
|--|--|--------------------------------------|--|--------------------------------|---|--|---|--|----------------------------|
|  |  |                                      |  | Code                           | V (A) (D)   | Date Exercisable   | Expiration Date   | Title                                      | Amount or Number of Shares |

## Reporting Owners

**Reporting Owner Name / Address**

**Relationships**

Director    10% Owner    Officer    Other

BREWER KEVIN J  
C/O AXCELIS TECHNOLOGIES, INC.  
108 CHERRY HILL DRIVE  
BEVERLY, MA 01915

EVP, Operations

## Signatures

Lynnette C. Fallon, as attorney in fact for Kevin J. Brewer

12/09/2010

\_\_Signature of Reporting Person

Date

## Explanation of Responses:

\* If the form is filed by more than one reporting person, see Instruction 4(b)(v).

\*\* Intentional misstatements or omissions of facts constitute Federal Criminal Violations. See 18 U.S.C. 1001 and 15 U.S.C. 78ff(a).

Of the shares held as of December 9, 2010, 13,421 were issuable on vesting of restricted stock units granted the executive under the 2000

(1) Stock Plan and are subject to forfeiture. A portion of these shares will be withheld by the Company on vesting to satisfy tax withholding requirements.

Note: File three copies of this Form, one of which must be manually signed. If space is insufficient, see Instruction 6 for procedure.

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