

BASS JAMES K  
Form 3  
October 22, 2010

**FORM 3 UNITED STATES SECURITIES AND EXCHANGE COMMISSION**  
**Washington, D.C. 20549**

OMB APPROVAL

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**INITIAL STATEMENT OF 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 * |         | 2. Date of Event Requiring Statement | 3. Issuer Name <b>and</b> Ticker or Trading Symbol                     |  |
| Â BASS JAMES K                            |         | (Month/Day/Year)                     | MERCURY COMPUTER SYSTEMS INC [MRCY]                                    |  |
| (Last)                                    | (First) | (Middle)                             | 4. Relationship of Reporting Person(s) to Issuer                       | 5. If Amendment, Date Original Filed(Month/Day/Year) |
|   |         | 10/21/2010                           |  |  |
| 201 RIVERNECK ROAD                        |         |                                      | (Check all applicable)   |  |
| (Street)                                  |         |                                      | <input checked="" type="checkbox"/> Director                           | <input type="checkbox"/> 10% Owner                   |
| CHELMSFORD,Â MAÂ 01824                    |         |                                      | <input type="checkbox"/> Officer                                       | <input type="checkbox"/> Other                       |
| (City)                                    | (State) | (Zip)                                | (give title below) (specify below)                                     |  |
|   |         |                                      | 6. Individual or Joint/Group Filing(Check Applicable Line)             |  |
|   |         |                                      | <input checked="" type="checkbox"/> Form filed by One Reporting Person |  |
|   |         |                                      | <input type="checkbox"/> Form filed by More than One Reporting Person  |  |

**Table I - Non-Derivative Securities Beneficially Owned**

| 1. Title of Security (Instr. 4) | 2. Amount of Securities Beneficially Owned (Instr. 4) | 3. Ownership Form: Direct (D) or Indirect (I) (Instr. 5) | 4. Nature of Indirect Beneficial Ownership (Instr. 5) |
|---------------------------------|---|--|---|
| Common Stock                    | 10,000 <sup>(1)</sup>                                 | D  | Â   |

Reminder: Report on a separate line for each class of securities beneficially owned directly or indirectly. SEC 1473 (7-02)

**Persons who respond to the collection of information contained in this form are not required to respond unless the form displays a currently valid OMB control number.**

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

| 1. Title of Derivative Security (Instr. 4) | 2. Date Exercisable and Expiration Date (Month/Day/Year) | 3. Title and Amount of Securities Underlying Derivative Security (Instr. 4) | 4. Conversion or Exercise Price of Derivative Security | 5. Ownership Form of Derivative Security: Direct (D) or Indirect | 6. Nature of Indirect Beneficial Ownership (Instr. 5) |
|--|--|---|--|--|---|
|  | Date Exercisable   | Expiration Date   | Title  | Amount or Number of  |   |

