



DIVISION OF
CORPORATION FINANCE

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

Mail Stop 3030

April 22, 2010

Via U.S. Mail and Fax (949)756-2602

Mr. John W. Hohener
Vice President, Chief Financial Officer
Microsemi Corporation
2381 Morse Avenue
Irvine, California 92614

**Re: Microsemi Corporation
Form 10-K for the Fiscal Year Ended September 27, 2009
Filed November 24, 2009
File No. 000-08866**

Dear Mr. Hohener:

We have reviewed your response dated April 1, 2010 and have the following comments. Where indicated, we think you should revise your documents in response to these comments. If you disagree, we will consider your explanation as to why our comments are inapplicable or a revision is unnecessary. Please be as detailed as necessary in your explanation. In some of our comments, we may ask you to provide us with information so we may better understand your disclosure. After reviewing this information, we may raise additional comments.

Please understand that the purpose of our review process is to assist you in your compliance with the applicable disclosure requirements and to enhance the overall disclosure in your filing. We look forward to working with you in these respects. We welcome any questions you may have about our comments or any other aspect of our review. Feel free to call us at the telephone numbers listed at the end of this letter.

Form 10-K for the year ended September 27, 2009

Compensation Discussion and Analysis, page 16

1. Your response to our prior comment 4 that in setting base salary the committee's "determinations are inherently subjective" is unclear. Please confirm, if true, that your disclosure in future filings will clearly state that these decisions are based on the committee's subjective determination and you will not imply that objective factors, such as financial performance, are used.
2. We note your response to our prior comment 7. However, with greater detail, please expand your analysis and describe the authority upon which you rely for your statement that this is "not a matter for which disclosure is required in Compensation Discussion and Analysis." For example, with regards to Mr. Peterson's agreement to forego any cash bonus award for fiscal 2009, please tell us why you have not described the factors considered in the decision to decrease compensation. See Item 402(b)(2)(ix) of Regulation S-K. Further, please tell us where you intend to disclose the fact that the matters referenced in the January 29, 2009 Form 8-K were not a factor in the decisions of the compensation committee in granting Mr. Peterson any other forms of compensation or why you believe such disclosure is not required. Please provide any authority you rely on for your conclusions.
3. We note you state in your response to comment 7 that the penalties were the result of a "negotiated" agreement between the Board and Mr. Peterson. Please reconcile that statement with the implication from your Form 8-K that these penalties were a unilateral decision by the Board of Directors when you state the board "impos[ed] appropriate financial penalties" and "the Board has assessed significant financial penalties." If instead of being an imposed or assessed penalty, this was a negotiated agreement, you should clearly disclose that fact.
4. Our prior comment 8 sought your analysis and calculations of how the extending of the vesting dates affected Mr. Peterson's compensation. We reissue that comment. Please describe the mechanics of how you extended these vesting dates and how this affected Mr. Peterson's compensation.

As appropriate, please amend your filings and respond to these comments within 10 business days or tell us when you will provide us with a response. Please furnish a cover letter with your amendments that keys your responses to our comments and provides any requested information. Detailed cover letters greatly facilitate our review. Please understand that we may have additional comments after reviewing your amendments and responses to our comments.

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We urge all persons who are responsible for the accuracy and adequacy of the disclosure in the filing to be certain that the filing includes all information required under the Securities Exchange Act of 1934 and that they have provided all information investors require for an informed investment decision. Since the company and its management are in possession of all facts relating to a company's disclosure, they are responsible for the accuracy and adequacy of the disclosures they have made.

In connection with responding to our comments, please provide, in writing, a statement from the company acknowledging that:

- the company is responsible for the adequacy and accuracy of the disclosure in the filing;
- staff comments or changes to disclosure in response to staff comments do not foreclose the Commission from taking any action with respect to the filing; and
- the company may not assert staff comments as a defense in any proceeding initiated by the Commission or any person under the federal securities laws of the United States.

In addition, please be advised that the Division of Enforcement has access to all information you provide to the staff of the Division of Corporation Finance in our review of your filing or in response to our comments on your filing.

You may contact Julie Sherman, Staff Accountant, at (202) 551-3640 or me at (202) 551-3603 if you have any questions regarding comments on the financial statements and related matters. Please contact Alicia Lam, Staff Attorney, at (202) 551-3316 or Jay Mumford, Reviewing Attorney, at (202) 551-3637 if you have questions on any other comments. In this regard, do not hesitate to contact Jeff Jaramillo, Accounting Branch Chief, at (202) 551-3212.

Sincerely,

Jay Webb
Reviewing Accountant