



DIVISION OF  
CORPORATION FINANCE

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

August 4, 2011

Via E-mail

Steven Nasiri  
President, Chief Executive Officer  
and Chairman  
InvenSense, Inc.  
1197 Borregas Avenue  
Sunnyvale, CA 94089

**Re: InvenSense, Inc.  
Amendment No. 3 to Registration Statement on Form S-1  
Filed July 27, 2011  
File No. 333-167843**

Dear Mr. Nasiri:

We have reviewed your registration statement and have the following comments. In some of our comments, we may ask you to provide us with information so we may better understand your disclosure.

Please respond to this letter by amending your registration statement and providing the requested information. If you do not believe our comments apply to your facts and circumstances or do not believe an amendment is appropriate, please tell us why in your response.

After reviewing any amendment to your registration statement and the information you provide in response to these comments, we may have additional comments.

The Opportunity for Motion Processing Solutions, page 68

1. We note your reliance on information regarding the video game and tablet markets in the first and third bullets on page 69 attributed to IHS iSuppli and your reference to information from Yole Développement at the top of page 70. Please furnish marked copies of the reports upon which this disclosure is based. Also, to the extent the information in these reports or otherwise relied upon in the preparation of the prospectus was not covered by your response to comment 12 from our letter dated July 22, 2010, please tell us:
  - whether all of the information is publicly available;
  - whether you paid for the compilation of any of the data;

- whether any information was prepared for your use in the registration statement; and
- whether the authors of the information consented to your use of such data in the registration statement.

To the extent that you were affiliated with the preparation of any of the data, please ensure that your disclosure clearly indicates the nature of all such affiliations.

Anti-Takeover Provisions, page 121

2. We note your disclosure in the second paragraph regarding the two-thirds vote requirement for the stockholders to amend your bylaws. Please revise to also disclose the 80% vote requirement indicated in Section 3.1 of Exhibit 3.7 to amend that section of your bylaws. Please also consider whether you should make appropriate revisions to your second risk factor on page 29.

Exhibit 5.1

3. The opinion that you file to satisfy your obligation per Regulation S-K Item 601(b)(5) should not assume facts that are readily ascertainable. As such, please tell us why the assumptions mentioned in the last sentence of the second paragraph are not readily ascertainable. For example, why is counsel unable to readily ascertain the factual matters underlying those assumptions through an officers' certificate?

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 the information the Securities Act of 1933 and all applicable Securities Act rules require. 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.

Notwithstanding our comments, in the event you request acceleration of the effective date of the pending registration statement please provide a written statement from the company acknowledging that:

- should the Commission or the staff, acting pursuant to delegated authority, declare the filing effective, it does not foreclose the Commission from taking any action with respect to the filing;
- the action of the Commission or the staff, acting pursuant to delegated authority, in declaring the filing effective, does not relieve the company from its full responsibility for the adequacy and accuracy of the disclosure in the filing; and
- the company may not assert staff comments and the declaration of effectiveness as a defense in any proceeding initiated by the Commission or any person under the federal securities laws of the United States.

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Please refer to Rules 460 and 461 regarding requests for acceleration. We will consider a written request for acceleration of the effective date of the registration statement as confirmation of the fact that those requesting acceleration are aware of their respective responsibilities under the Securities Act of 1933 and the Securities Exchange Act of 1934 as they relate to the proposed public offering of the securities specified in the above registration statement. Please allow adequate time for us to review any amendment prior to the requested effective date of the registration statement.

Please contact Louis Rambo at (202) 551-3289 or Tim Buchmiller, reviewing attorney, at (202) 551-3635 with any questions.

Sincerely,

/s/ Tim Buchmiller for

Russell Mancuso  
Branch Chief

cc (via e-mail):      John W. Campbell III, Esq.  
                             Andrew D. Thorpe, Esq.  
                             Alfredo B. D. Silva, Esq.  
                             Morrison & Foerster LLP