



DIVISION OF
CORPORATION FINANCE

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

Mail Stop 3030

September 30, 2009

Via U.S. Mail and Fax 972-8-9438769

Mr. Raanan Cohen
Chief Executive Officer
Orbotech LTD
Sanhedrin Boulevard
North Israel Zone
Yavne 81101, Israel

**Re: Orbotech LTD
Form 20-F for the Fiscal Year Ended December 31, 2008
Filed March 27, 2009
File No. 000-12790**

Dear Mr. Cohen:

We have reviewed your filings 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 20-F for the fiscal year ended December 31, 2008

Item 5. Operating and Financial Review and Prospects, page 37

(c) Critical Accounting Policies, page 38

(vii) Goodwill and Acquired Intangible Assets, page 43

(A) Goodwill, page 43

1. We note that during 2008 as a result of the global economic downturn that “negatively affected capital expenditure in the electronics industry and a significant reduction in your market capitalization” you recorded an impairment charge for goodwill totaling \$110.4 million and we also note a large portion of the written-off amount related to your FPD reporting unit’s goodwill. Regarding your impairment analysis of goodwill, and in the interest of providing readers with a better insight into management’s judgments into accounting for goodwill, please consider disclosing the following in future filings:
 - We note that you indicate fair value was determined by using a market-based and income approach. In addition to disclosing each of the valuation methodologies used, please include sufficient information to enable a reader to understand how each of the methods used differ, the assumed benefits of a valuation prepared under each method, and why management selected these methods as being the most meaningful for the company in preparing the goodwill impairment analyses.
 - A qualitative and quantitative description of the material assumptions used and a sensitivity analysis of those assumptions based upon reasonably likely changes.
 - If applicable, how the assumptions and methodologies used for valuing goodwill in the current year have changed since the prior year highlighting the impact of any changes.

(B) Acquired Intangible Assets, page 44

2. We note that in addition to the \$86 million of goodwill you recorded (and assigned to your FPD reporting unit) as part of your October 2008 acquisition of PDI you also recorded approximately \$102 million of identifiable intangible assets. Please tell us and revise future filings to disclose more about how you were able to conclude the value of these intangible assets were not also impaired as a result of factors that caused your FPD reporting unit’s goodwill (which included the goodwill related to your PDI acquisition) to be impaired.

(h) Results of Operations, page 50

(i) Year Ended December 31, 2008 Compared to Year Ended December 31, 2007, page 51

3. We noted from your disclosure that during the third quarter of 2008 you began phasing out assembled PCB business and from the beginning of 2009 you have ceased to develop and market assembled PCB equipment. Further, during the first quarter of 2009 you signed an agreement for the sale of you assembled PCB systems in the Asia Pacific region. Please tell us if and when management committed to a plan to sell the PCB business and your consideration of the impact of the guidance at paragraphs 41 to 46 of SFAS 144 on your accounting for and presentation of the PCB business sale.

2008 Consolidated Financial Statements, page F-1

Notes to Consolidated Financial Statements, page F-10

Note 1 – Significant Accounting Policies, page F-10

i. – Goodwill, page F-13

4. We note your critical accounting policy disclosures on page 43 include detailed disclosures of your goodwill accounting policies. Please expand this note in future filings to include similarly detailed disclosures, including how you assess and measure goodwill for impairment.

l. –Recognition of revenue, page F-14

5. We noted disclosures herein that “The Company grants its customers a warranty on products sold, usually for a period of six to twelve months. Upon revenue recognition, the Company defers the fair value of the warranty and recognizes it as service revenue ratably over the warranty period.” Please tell us and revise your future disclosures to clarify why the warranties you offer result in the recognition of revenue. Tell us how you have applied the guidance at SFAS 5 with respect to any warranties offered in connection with the products you sell.

Exhibits 12.1 and 12.2

6. We note that your certifications filed pursuant to Exchange Act Rule 13a-14(a) are not in the exact form prescribed by Item 601(b)(31) of Regulation S-K. Specifically, in paragraphs 2, 3, 4(a), 4(c) and 4(d), you have substituted “Annual Report” for “report,” and in paragraph 4(d) you have removed the language “(the registrant’s fourth fiscal quarter in the case of an annual report).” Please revise your future filings to include certifications that conform to the exact wording required by Item 601(b)(31) of Regulation S-K.

As appropriate, please 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.

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.

Mr. Raanan Cohen
Orbotech LTD
September 30, 2009
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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 Gabe Eckstein, Staff Attorney, at (202) 551-3286 or Mary Beth Breslin, Reviewing Attorney, at (202) 551-3625 if you have questions on any other comments. In this regard, do not hesitate to contact Martin James, Senior Assistant Chief Accountant, at (202) 551-3671.

Sincerely,

Jay Webb
Reviewing Accountant