

Mail Stop 4561

June 4, 2009

Mr. Miron (Ronnie) Kenneth  
Chief Executive Officer and Chairman  
Voltaire Ltd.  
13 Zarhin Street  
Raanana 43662 Israel

**Re: Voltaire Ltd.  
Form 20-F for the Fiscal Year Ended December 31, 2008  
Filed April 2, 2009  
Form 6-K filed February 18, 2009  
Form 6-K filed May 6, 2009  
File No. 001-33611**

Dear Mr. Kenneth:

We have reviewed the above-referenced filings and have the following comments. If indicated, we think you should revise your document in response to these comments. If you disagree, we will consider your explanation as to why our comment is 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 supplemental 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 filings. 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

General

1. We are in receipt of your application for confidential treatment received April 7, 2009 (Internal CF No. 23476) for portions of an agreement filed as an exhibit to your Form 20-F. We will transmit any comments we may have on your application under separate cover. Please be advised that any comments relating to

the pending confidential treatment request will need to be resolved prior to the conclusion of the staff's review of your Form 20-F.

Item 3. Key Information

A. Selected Financial Data, page 1

2. Tell us how you considered providing all of the items required in Item 3.A.2 of the Instructions to Form 20-F. For example, it appears that you have not included total assets, net assets, and capital stock.

Item 4. Information on the Company

B. Business Overview

Manufacturing and Supply, page 29

3. You disclose that the company entered into a memorandum of understanding with A.L. Electronics in June of 2008 pursuant to which A.L. Electronics manufactures your Grid Director 36 port DDR and QDR switches. However, this memorandum of understanding is not filed as an exhibit to your annual report on Form 20-F. Please provide us with your analysis as to why this agreement is not required to be filed as an exhibit pursuant to paragraph 4(b)(ii) of the Instructions as to Exhibits of Form 20-F. In this regard, we note your risk factor disclosure on page 7 stating that your ability to deliver products to your customers could be materially adversely affected in the event that the facilities of any of your contract manufacturers are damaged or they experience financial distress, which suggests that the company's business may be substantially dependent on its arrangement with A.L. Electronics.

Item 5. Operating and Financial Review and Prospects

A. Operating Results

Results of Operations

Year Ended December 31, 2008 Compared to Year Ended December 31, 2007

Income Tax Benefit (Expense), page 39

4. We note that you recognized tax expense although you had a net loss in December 31, 2008. Given that one would normally expect a tax benefit as a result of a loss, tell us what consideration you gave to expanding your disclosures to explain the nature of your net tax expense.

F. Tabular Disclosure of Contractual Obligations, page 49

5. Tell us what consideration you gave to the inclusion of FIN 48 liabilities in your table of contractual obligations. Refer to Discussion Document D of the SEC Regulations Committee Meeting on April 17, 2007.

Item 11. Quantitative and Qualitative Disclosures About Market Risk

Risk of Interest Rate Fluctuation, page 84

6. We note your discussion of marketable securities under your risk of interest rate fluctuation. Please tell us how you considered providing one of the three disclosure alternatives under Item 11(a)(1) of Form 20-F to discuss potential risk.

Item 17. Financial Statements

Consolidated Statements of Cash Flows, page F-8

7. We note that you have recorded excess tax benefits from stock-based compensation as a cash inflow from financing activities in the year ended December 31, 2008. Please tell us your consideration for separately presenting a corresponding cash outflow from operating activities for these excess tax benefits pursuant to paragraphs 23.c of SFAS No. 95 and paragraph A96 of SFAS No. 123R. In addition, please tell us where you have classified the excess tax benefit within your cash flows from operating activities in the year ended December 31, 2008.

Form 6-Ks filed February 18, 2009 and May 6, 2009

8. We believe the non-GAAP consolidated statements of operations columnar format appearing in your Form 6-Ks filed on February 18, 2009 and May 6, 2009 may create the unwarranted impression to investors that the non-GAAP operating statements have been prepared under another comprehensive set of accounting rules or principles while also conveying undue prominence to a statement based on non-GAAP measures. In addition, Section II.A.2 of SEC Release 33-8176 defines non-GAAP measures and does not contemplate including non-GAAP financial statements as a “measure.” Please remove that presentation, or explain to us in reasonable detail why its retention is justified in light of these concerns. As a substitute for this presentation format, you may consider presenting only reconciliations for individual non-GAAP measures (i.e., non-GAAP operating income (loss) and non-GAAP net income (loss)), provided each one complies with Regulation G and considers the Division of Corporation Finance’s Frequently Asked Questions Regarding Use of Non-GAAP Financial Measures, Question 8.

9. We note your disclosure of non-GAAP measures for both the current and historical periods. Please ensure that future uses of such measures are in compliance with the disclosure requirements of Item 100(a)(2) of Regulation G. In this respect, ensure that you include a reconciliation of your non-GAAP financial measures to the most directly comparable GAAP financial measures for all periods for which these measures are presented.
10. We note that operating expenses for the first quarter of 2009 included a provision for a specific doubtful debt of \$1.7 million. Further describe the nature and timing of this charge. Tell us what consideration you gave to any impact on the related revenue recognition.

\* \* \* \* \*

Please respond to these comments within 10 business days or tell us when you will provide us with a response. Please submit all correspondence and supplemental materials on EDGAR as required by Rule 101 of Regulation S-T. If you amend your filing(s), you may wish to provide us with marked copies of any amendment to expedite our review. Please furnish a cover letter that keys your response 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 any amendment and your response 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.

Mr. Miron (Ronnie) Kenneth  
Voltaire Ltd.  
June 4, 2009  
Page 5

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 Ryan Rohn, Staff Accountant, at (202) 551-3739, or Melissa Walsh, Senior Staff Accountant, at (202) 551-3224 if you have any questions regarding comments on the financial statements and related matters. Please address questions regarding all other comments to Katherine Wray, Staff Attorney, at (202) 551-3483. If you need further assistance, you may contact me at (202) 551-3730.

Sincerely,

Stephen Krikorian  
Accounting Branch Chief