



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

Mail Stop 3030

February 26, 2010

Via Facsimile and U.S. Mail

Mr. Kirk K. Mandy
Chief Executive Officer
Zarlink Semiconductor Inc.
400 March Road
Ottawa, Ontario, Canada K2K 3H4

Re: Zarlink Semiconductor Inc.
Form 20-F for fiscal year ended March 27, 2009
Filed June 4, 2009
File No. 1-08139

Dear Mr. Mandy:

We have reviewed your filing and have the following comments. Where indicated, we think you should revise future filings 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 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 on 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 fiscal year ended March 27, 2009

Item 5. Operating and Financial Review and Prospects, page 17

Critical Accounting Estimates, page 17

– Revenue Recognition, page 17

1. We note your disclosure here that you offer sales programs to your distributors, including ship and debit claims which relate to pricing adjustments based upon distributor resale. We further note your disclosure that you recognize revenue at the time of shipment in part because the price to the buyer is substantially fixed or determinable at the date of sale. Please address the following in your response and in future filings:
 - Explain why you state that the price to the buyer is “substantially” fixed or determinable. Discuss how a price that is “substantially” fixed or determinable complies with the guidance in SAB No. 104.
 - Describe your ship and debit claims in greater detail. In this regard, discuss if there is a limit to the amount of claims a distributor can make for any particular product. Also discuss the circumstances that could result in a distributor filing a ship and debit claim. Finally, tell us the typical timeframe between your sale of goods to the distributor and the distributors subsequent resale of the goods.
 - Giving specific consideration to the ship and debit claims, explain in greater detail how you concluded that the sales price was fixed or determinable. To the extent that the ship and debit claims are contingent on future pricing actions, explain how you are able to estimate the future pricing actions and the impact it will have on your current sales prices.

Item 7, page 47

2. Please tell us where you have provided the information required by Item 7(A)(2) of Form 20-F.

Item 10. Additional Information, page 50

3. We note that you have filed the agreement and plan of merger between Zarlink Semiconductor Inc., ZLE Inc., Legerity Holdings, Inc., and Navigant Capital Advisors, LLC but did not provide a summary of the agreement. In future filings, please provide a summary of each material contract, including dates, parties, general nature of the contracts, terms and conditions, and amount of any consideration passing to or from the company or any other member of the group.

Item 18. Financial Statements, page 59

Consolidated Statements of Cash Flows, page 66

4. We note your disclosure on page 74 that your restricted cash was pledged as security toward your Swedish pension liability. With reference to paragraphs 230-10-45-10 through 230-10-45-17 of the FASB Accounting Standards Codification, please explain to us why you present the related restricted cash activity as a financing activity on your statements of cash flows.

Note 2. Accounting Policies, page 67

5. Please tell us and revise your disclosures in future filings to disclose your accounting policies with respect to your segment reporting. Refer to FASB Accounting Standards Codification Topic 280. In this regard, we note your disclosures on page 13 that you have one reportable segment. Please tell us the number of operating segments you have identified in accordance with paragraphs 280-10-50-1 through 280-10-50-9 of the FASB Accounting Standards Codification. As applicable, please also provide us with your detailed analysis of paragraphs 280-10-50-10 through 280-10-50-19 of the FASB Accounting Standards Codification supporting your conclusion that you have one reportable segment.

– (F) Fixed and Acquired Intangibles, page 68

6. Please reconcile your disclosure here that acquired intangible assets are initially recorded at cost with your disclosure on page 76 which states that intangible assets recorded in connection with the Legerity and Primarion acquisitions were separately valued based on a fair value analysis. Revise future filings as appropriate.

Note 11. Provisions for Exit Activities, page 78

7. We note your disclosure here of several restructuring activities implemented in recent years. We further note the combined rollforward presented on page 80. Please revise future filings to present the disclosures required by paragraph 420-10-50 of the FASB Accounting Standards Codification separately for each plan. In this regard, it is not clear from your disclosures the remaining restructuring liability as of March 27, 2009 for each of your restructuring plans.

* * * *

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 response that

Mr. Kirk K. Mandy
Zarlink Semiconductor Inc.
February 26, 2010
Page 4

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 amendment 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 and 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 David Burton, Staff Accountant, at (202) 551-3626 or me at (202) 551-3643 if you have questions regarding comments on the financial statements and related matters. Please contact Allicia Lam, Staff Attorney, at (202) 551-3316 or Daniel Morris, Special Counsel, at (202) 551-3314 if you have questions on other comments. In this regard, do not hesitate to contact Martin James, Senior Assistant Chief Accountant at (202) 551-3671.

Sincerely,

Kevin L. Vaughn
Accounting Branch Chief