



DIVISION OF
CORPORATION FINANCE

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

August 6, 2010

Young K. Sohn
Chief Executive Officer and President
Inphi Corporation
1154 Sonora Court
Sunnyvale, California 94086

**Re: Inphi Corporation
Registration Statement on Form S-1
Amended July 21, 2010
File No. 333-167564**

Dear Mr. Sohn:

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.

Prospectus Cover

1. Please disclose the principal amount of shares being offered. This information is required to be disclosed and cannot be omitted pursuant to Rule 430A.
2. If you elect to retain the narrative disclosure accompanying your graphics on the front and back cover, please also present a balanced portrayal of your company and business, such as by also noting the business risks or challenges. If such balancing disclosure is inappropriate for your graphics, please relocate the narrative disclosure to a more appropriate section of your prospectus where you can present balanced disclosure.

Inphi Corporation, page 1

3. Regarding your response to prior comment 4, it is unclear how your disclosure as to your statements of leadership is balanced, given the information provided in the second

paragraph of the IC-00005 document. It is furthermore unclear how the information provided addresses the high performance of your products. Please advise.

4. We note your response to prior comment 7 and reissue the comment. For example and without limitation, we refer to your disclosure on page 3 regarding the “50 GHz MUX and DEMUX product” and note that the table on page 69 continues to reference numerous undefined acronyms or other technical terms.
5. Regarding your response to prior comment 8, please clarify whether the original equipment manufacturers listed in the second paragraph under this section represent the only entities that you were able to verify as end customers. If not, please tell us what objective criteria you used to select these original equipment manufacturers out of all entities that you could verify as end users, and whether any other similarly verifiable end users were omitted.

The complexity of our products could result in undetected defects..., page 12

6. It appears that you have not revised the disclosure under this risk factor, as set forth in your response to prior comment 16. Please advise.

If we fail to accurately anticipate..., page 12

7. Please identify here the new product that you introduced in 2009. In addition, please identify, and discuss the materiality of, the new product under “Products” on page 68.

We are subject to governmental export and import controls..., page 23

8. We note your response to prior comment 21. We also note the remaining risk factors addressing domestic and international regulations. We reissue our prior comment. Revise to include, or provide a cross-reference to, a discussion of the various material regulations for each government of country. We note, for example, that your disclosure indicates that the statutory authorities affecting your licensing have not been fully disclosed or discussed.

Special Note Regarding Forward-Looking Statements, page 29

9. Please note that the examples set forth in prior comment 23 were non-exhaustive. Therefore, we reissue the prior comment. For example, note that the second bullet appears to be overbroad.

Management’s Discussion and Analysis of Financial Condition..., page 37

10. We note your response to prior comment 25. In an appropriate section, please revise to clarify what the “varying temperature, supply voltage and manufacturing restrictions”

described in the revised disclosure are, and state how these restrictions contribute to your status as a “sole supplier” or “one of a limited number of suppliers.”

11. In your revisions in response to prior comment 25, you state that your Singapore operations “will transition.” Please clarify the nature of your initial operations in Singapore (i.e., the operations from which you are transitioning).
12. We note your response to prior comment 28 and reissue. Please revise to clarify the nature of your “ongoing, informal collaborative discussions.”

Emergence of Cloud Computing, page 62

13. We note your response to prior comment 30 and reissue. Your revised disclosure remains difficult for investors to understand. For example, clarify your reference to the datacenter, hardware and software layers and “cloud-enabled” technologies.

Benefits We Provide to Our Customers, page 66

14. We note your response to prior comment 31 and reissue. Please expand your revised disclosure to balance the discussion of the positive aspects of your business model.

Products, page 68

15. It is unclear how you have responded to prior comment 32. Specifically, we note that you have not revised this section to clarify what principal product or products account for 10% or more of your consolidated revenue. Accordingly, we reissue the comment. Please also provide similar disclosure in the prospectus summary.
16. We note your response to prior comment 33. Please revise to clarify the status of the “new low voltage product” currently described on page 47.

Sales and Manufacturing, page 70

17. We note your response to prior comment 35. With a view toward disclosure, please tell us how your 100 sales professionals are distributed geographically. In addition, please clarify for us whether the sales professionals are sales agents or otherwise.

Compensation Policies and Practices as They Relate to Risk Management, page 90

18. We note your revised disclosure in response to prior comment 40. However, it remains unclear what substantive process you undertook to determine that your compensation policies and practices are not reasonably likely to have a material adverse effect on your company. Therefore, please revise your disclosure to clarify how your review of specific compensation elements led to this conclusion. For example, what risk factors, mitigators,

internal controls and specific elements of your compensation policies and practices were considered? Please expand your disclosure accordingly.

Related Party Transactions, page 100

19. We note your response to prior comment 41. Please expand your analysis of the legal basis upon which you determined that Mr. Tan, the chief executive officer and president of Cadence, does not have a direct or indirect interest in your agreement with Cadence.

Principal and Selling Stockholders, page 102

20. Refer to the second sentence of prior comment 43 and revise to disclose all persons who exercise, directly or indirectly, sole or shared voting and/or dispositive powers for the entities affiliated with Walden International.
21. We note your response to prior comment 44 and may have further comment once the requested information is provided.

Financial Statements, page F-1

10. Stock Option Plan, page F-24

22. We note that you revised MD&A to address our prior comment 45. Please continue to update your disclosures in MD&A to address our prior comment 45 on a going forward basis. Also, update future amendments to discuss each significant factor contributing to any differences between the estimated IPO price and the fair value determined on each underlying common stock, either contemporaneously or retrospectively, as of the date of each grant and equity-related issuance. Please be advised that we may have further comment upon our review of your revised disclosures.

16. Subsequent Events, page F-32

23. We note from your response to our prior comment 46 that you plan to file Winyatek Technologies, Inc. audited historical financial statements for its most recently completed fiscal year in your next amendment to this Registration Statement. Please note that we may have further comments upon our review of those financial statements.
24. Consideration should be given on an ongoing basis to the updating requirements of Rule 3-12 of Regulation S-X. An updated auditor's consent should also be included with any amendment to the filing.

Item 16. Exhibits and Financial Statement Schedules, page II-4

25. We note your response to prior comment 48. However, it appears that you have not filed all material agreements. For example, we note that you have not filed any agreements with Samsung or Micron.
26. In addition, please tell us whether you have distributor agreements with the “significant” distributors that are discussed on pages F-14 and F-15. We note in particular that the two distributors you identify as “Customers D and G” sell your products exclusively to Customer F, which represented 17% of your revenue for the fiscal year ended December 31, 2009 and the quarter ended March 31, 2010.

Exhibit 2.1

27. We note that you have redacted certain information on page 37 of this exhibit, but that you have not filed a confidential treatment request. Please advise.
28. We note the omission of Schedule 1 to exhibit 2.1. Please revise the exhibit so that it contains a list briefly identifying the contents of the omitted schedule and an agreement to furnish supplementally a copy of the omitted schedule to the Commission upon request. Refer to Regulation S-K Item 601(b)(2).

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.

You may contact Andi Boerman at (202) 551-3645 or Jay Webb, Accounting Reviewer, at (202) 551-3603 if you have questions regarding comments on the financial statements and related matters. Please contact Celia Soehner at (202) 551-3463 or Daniel Morris, Special Counsel, at (202) 551-3314 with any other questions.

Sincerely,

Russell Mancuso
Branch Chief

cc (via facsimile): Davina K. Kaile, Esq. — Pillsbury Winthrop Shaw Pittman LLP