



DIVISION OF
CORPORATION FINANCE

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

August 20, 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 August 13, 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.

Inphi Corporation, page 1

1. We note your revisions in response to prior comment 4. However, we note that your reference to your "GSO4 product," which you describe as "an integrated phase lock loop...and register buffer" continues to use terms that may be unfamiliar to an investor who is not an expert in your industry. Please revise to use concrete, everyday terms to explain what this product is designed to do and how it functions.

Changes in current or future laws..., page 23

2. We note your response to prior comment 8. Please disclose the consequences if your product designs or supply chains are deemed not in compliance with the RoHS Directive.

Income Taxes, page 53

3. We refer to your added disclosure at the bottom of page 53. Please revise to clarify what you mean when you state that your “new low voltage product...is shipping in volume.” For example, is this a full product launch?

Products, page 75

4. Please revise at page 53 to clarify, if true, that the new low voltage product to which you refer is the GS02.

Facilities, page 81

5. We note your added disclosure in the penultimate sentence of this section. Please file as an exhibit the lease for your office space in Taiwan.

Compensation Policies and Practices...., page 97

6. Please revise to clarify, if true, that your determination that your compensation policies and practices do not have a material adverse effect on your company was based upon the considerations identified in the second paragraph of this section.

Other Transactions, page 109

7. We note your response to prior comment 19. Please file the agreement with Cadence as an exhibit with your next amendment

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

8. We note your responses to prior comments 25 and 26. Please provide us with supplemental copies of the agreements referenced in these responses. We may have further comment after we review your response.

Exhibit 2.1

9. We note your response to prior comment 28. Please supplementally provide a copy of Schedule 1 to Exhibit 2.1.

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.

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,

Martin James
Acting Assistant Director and
Senior Assistant Chief Accountant

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