



DIVISION OF
CORPORATION FINANCE

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

November 5, 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 October 29, 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.

Exhibit Index

1. We note your pending application for confidential treatment. We will provide any comments on the request in a separate letter. Please resolve any comments on your application before requesting acceleration of the effective date of this registration statement.

Exhibit 5.1

2. Refer to the second paragraph of the opinion. It is unclear why you have specified that the shares must be issued and sold in accordance with the resolutions adopted by the board of directors of the company. Please remove this language or tell us why you believe it is necessary.

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

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