

Mail Stop 6010

April 28, 2006

By U.S. Mail and Facsimile to (818) 871-1805

Mr. Thomas B. Miller  
Chief Financial Officer  
IXIA  
26601 West Agoura Road  
Calabasas, CA 91302

**RE: IXIA  
Form 10-K for the year ended December 31, 2005  
Form 8-K filed April 14, 2006  
File No. 0-31523**

Dear Mr. Miller:

We have reviewed your filing and have the following comments. We have limited our review of your filing to those issues we have addressed in our comments. Where indicated, we think you should revise your future documents 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 any other aspect of our review. Feel free to call us at the telephone numbers listed at the end of this letter.

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Form 10-K for the year ended December 31, 2005

Consolidated Statements of Income, page 48

1. Please revise future filings to remove the stock-based compensation subtotal from the table included as a footnote on the face of your statements of income. Otherwise, as indicated in SAB Topic 14-F, please revise the statement to present the related stock-based compensation charges in a parenthetical note to the appropriate income statement line items. That guidance also indicates that you may present the information in the notes to the financial statements or within MD&A.

Note 3. Selected Balance Sheet Data, page 58

Property and Equipment, net, page 60

2. Please explain your policy with respect to the demonstration equipment. Explain the contractual terms under which it has been loaned, including any associated requirement that the borrower purchase the equipment, or any disposable products or services. Also, tell where the depreciation expense is recorded in your statement of operations and why you believe the classification is appropriate.

Note 4. Acquisitions, page 60

Communication Machinery Corporation

3. Please tell us why pro forma net revenues for the year ended December 31, 2004 is significantly less than your actual revenues for the same period. Additionally, please show us how you calculated your 2004 pro forma earnings per share.

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4. We note that you present your non-GAAP measures and reconciliation in the form of a non-GAAP statement of income. This format may be confusing to investors as they also reflect several non-GAAP measures, including non-GAAP cost of revenue; non-GAAP amortization of purchased technology, non-GAAP gross profit, non-GAAP research and development expenses; non-GAAP sales and marketing; non-GAAP general and administrative; non-GAAP amortization of intangible assets, non-GAAP total operating expenses, non-GAAP (loss) income from operations, non-GAAP income before taxes, non-GAAP income tax expense, non-GAAP net income and non-GAAP earnings per share, which have

not been described to investors. In fact, it appears that management does not use these non-GAAP measures but they are shown here as a result of the presentation format. Please note that Instruction 2 to Item 2.02 of Form 8-K requires that when furnishing information under this item you must provide all the disclosures required by paragraph (e)(1)(i) of Item 10 of Regulation S-K, including a reconciliation to the directly comparable GAAP measure for each non-GAAP measure presented and explain why you believe the measures provide useful information to investors.

- To eliminate investor confusion, please remove the non-GAAP statement of income from all future filings and instead disclose only those non-GAAP measures used by management that you wish to highlight for investors, with the appropriate reconciliations. Please provide your proposed revised disclosures.
- Please note that in the event that your Form 8-K is incorporated by reference into a 33 Act registration statement, we may have additional questions relating to the appropriateness of this information being included in a document filed with, and not just furnished to, the Commission. At that time, we may request an amendment to the Form 8-K.

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 that 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 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 Exchange Act of 1934 and that they have provided all information investors require for an informed 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

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- 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 Eric Atallah, Staff Accountant at (202) 551-3663 or me at (202) 551-3554 regarding comments on the financial statements and related matters. In this regard, do not hesitate to contact Martin James, Senior Assistant Chief Accountant, at (202) 551-3671 with any other questions.

Sincerely,

Angela Crane  
Branch Chief