



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

DIVISION OF
CORPORATION FINANCE

Mail Stop 3030

September 23, 2015

Via E-mail

Murugesan Shanmugaraj
President and Chief Executive Officer
Acacia Communications, Inc.
Three Clock Tower Place, Suite 100
Maynard, Massachusetts 01754

**Re: Acacia Communications, Inc.
Draft Registration Statement on Form S-1
Submitted August 27, 2015
CIK No. 0001651235**

Dear Mr. Shanmugaraj:

We have reviewed your draft 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 providing the requested information and either submitting an amended draft registration statement or publicly filing your registration statement on EDGAR. 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 the information you provide in response to these comments and your amended draft registration statement or filed registration statement, we may have additional comments.

Implications of Being an Emerging Growth Company, page 6

1. Please supplementally provide us with copies of all written communications, as defined in Rule 405 under the Securities Act, that you, or anyone authorized to do so on your behalf, present to potential investors in reliance on Section 5(d) of the Securities Act, whether or not they retain copies of the communications.

Management's Discussion and Analysis of Financial Condition, page 53

Results of Operations – Revenue, page 57

2. We see your discussion that the significant increase in revenue each period relates to an increase in sales of products within the 100 Gbps product family, as well as the

introduction of products in the 400 Gbps product family. Please revise to further explain the reasons for the significant increases each period and quantify each material item that contributed to the increase such as price and/or volume changes. The disclosure should reveal underlying material causes of the factors described and any expected future impact on operating results. For further guidance, please refer to Item 303 and the related instructions in Regulations S-K as well as SEC Interpretive Release No. 33-8350.

Revenue, page 61

3. Please expand the disclosure in this section to quantify the decrease in revenue in the fourth quarter of 2014 mentioned on page 12.

Principal and Selling Stockholders, page 116

4. Please tell us whether any of the selling stockholders are broker-dealers or affiliates of broker-dealers.

Industry and Other Data, page 137

5. Please tell us whether you commissioned any of the third-party data presented in your document.

Financial Statements

Note 3. Summary of Significant Accounting Policies, page F-8

Revenue Recognition, page F-8

6. Please tell us more about the software that is integrated into your products. We note page 77 indicates that you use “advanced software,” page 83 discusses your “software intelligence,” page 84 discusses your “proprietary software;” and page 32 discusses the use of open source software. As part of your response, please also clarify how you consider the sale of the software as part of your products and how it impacts your revenue recognition.

Warranties, page F-11

7. Please revise to disclose the term of your product warranty in accordance with FASB ASC 460-10-50-4 through 8.

Note 13. Commitments and Contingencies, page F-28

8. We note from page 32 that you license certain technology from others, however, we do not see any discussion regarding royalty payments in the footnotes. Please revise to disclose the terms of any royalty agreements.

Note 11. Stock Compensation Plan, page F-22

9. We note from your disclosure on page F-25 that the performance condition for all RSUs is met upon a sale event or 185 days following the IPO, which was not considered probable as of June 30, 2015, and therefore no stock-based compensation expense has been recorded in the consolidated financial statements. Please revise to disclose an estimate of the amount of compensation expense that will be recorded upon determination that the performance condition is probable.
10. Please tell us the estimated IPO price range. To the extent that there is a significant difference between the estimated grant-date fair values of your common stock during the past twelve months and the estimated IPO price, please explain to us each significant factor contributing to the difference.

Exhibits and Financial Statement Schedules, page II-3

11. We note that you filed a request for confidential treatment for portions of exhibits to your draft registration statement. We will provide any comments on your request separately.

You may contact Julie Sherman at (202) 551-3640 or Brian Cascio, Accounting Branch Chief, at (202) 551-3676 if you have questions regarding comments on the financial statements and related matters. Please contact Tom Jones at (202) 551-3602 or me at (202) 551-3528 with any other questions.

Sincerely,

/s/ Amanda Ravitz

Amanda Ravitz
Assistant Director
Office of Electronics and Machinery

cc: Mark G. Borden, Esq.