



DIVISION OF  
CORPORATION FINANCE

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

Mail Stop 3720

January 29, 2010

Mr. John J. Joyce  
Chief Executive Officer  
Ambient Corporation  
79 Chapel Street  
Newton, Massachusetts 02458

**RE: Ambient Corporation**  
**Form 10-K for the year ended December 31, 2008**  
**Filed March 11, 2009**  
**File No. 0-23723**

**Forms 10-Q for fiscal quarter ended September 30, 2009**  
**Filed November 16, 2009**

Dear Mr. Joyce:

We have reviewed your response letter dated January 7, 2010. As noted in our comment letter dated December 7, 2009, we have limited our review to your financial statements and related disclosures and do not intend to expand our review to other portions of your documents.

Form 10-K  
Financial Statements  
Debt Modification, page F-16

1. Please expand your response to comment 3 of our letter dated December 7, 2009. Explain to us the business purpose for Vicis Master Fund Ltd.'s cash investment of \$8 million the business day immediately before Vicis' acquisition of a 64.5% controlling interest in the outstanding shares of your common stock. Clarify for us how you applied EITF 96-19 and explain to us why you believe that the \$8 million received from Vicis are fees according to EITF 96-19.

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Ambient Corporation  
January 29, 2010  
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Please respond to these comments through correspondence over EDGAR within 10 business days or tell us when you will provide us with a response. You may contact Joseph M. Kempf, Senior Staff Accountant, at (202) 551-3352 or Carlos Pacho, Senior Assistant Chief Accountant, at (202) 551-3835, if you have questions regarding comments on the financial statements and related matters. Please contact Jay Knight, Attorney-Advisor, at (202) 551-3370 or me at (202) 551-3810 with any other questions.

Sincerely,

Larry Spigel  
Assistant Director