



DIVISION OF  
CORPORATION FINANCE

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

Mail Stop 3720

April 20, 2010

**Via U.S. Mail and Fax**

Mr. James E. Doyle  
Vice President of Finance and Chief Financial Officer  
Applied Signal Technology, Inc.  
460 West California Avenue  
Sunnyvale, CA 94086

**RE: Applied Signal Technology, Inc.  
Form 10-K for the fiscal year ended October 31, 2009  
Filed January 12, 2010  
File No. 0-21236**

Dear Mr. Doyle:

We have completed our review of your Form 10-K and related filings and do not, at this time, have any further comments.

Sincerely,

Larry Spigel  
Assistant Director