

# Simulation and Analysis of Electrical/Optical Communication Links Using Free Software

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## Abstract

Copper and electrical channels have dominated the computer and data center ecosystem for years, with optical communications relegated to long-haul communications. The demise of copper has been predicted for years as speeds continue to increase unabated – a demise that has not materialized. Cracks are forming in copper’s dominance, however, as reach has diminished and power has soared, portending more optical integration into previously all-electrical systems.

Since signal integrity involves the analysis of the transmission and reception of signals throughout the entire link, optical components can complicate traditional analysis techniques. Much of this complication comes from optical modulators that are often unfamiliar to signal integrity engineers.

This paper serves as a small tutorial on how optical modulators and receivers can be integrated into signal integrity analysis.

## Biography

**Pete Pupalaikis** is a signal integrity engineer with Nubis Communications. Prior to Nubis, he worked for twenty-five years at Teledyne LeCroy designing high speed measurements instruments. He is the author of the book "S-parameters for Signal Integrity" and is an IEEE Fellow.

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# Introduction

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Consult [?] for a more in-depth discussion.