

**BUENAVENTURA ELECTRON DEVICES / CIRCUITS AND SYSTEMS SOCIETIES
CHAPTER**

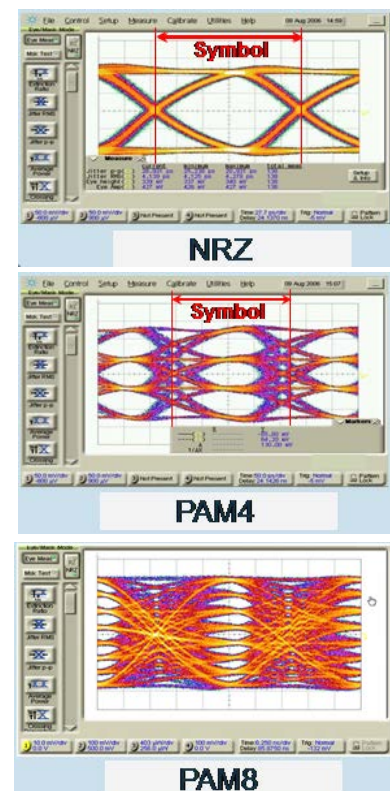
Enabling Higher Data Rates in Optical Communications

Speaker: Dr. Michael Case, Inphi Corporation

April 25, 2017 at 6:30 PM

Location: Skyworks Solutions, Newbury Park, CA

Demand for more data bandwidth has been and is forecast to continue exponential growth. The demand that starts with an individual's phone and office at 10's of Mb/s is aggregated at community, city and country levels requiring Tb/s of data throughput over long haul networks. Other aggregation points are data centers of cloud services, social media and entertainment providers within the server farms. Optical interconnect is the highest bandwidth medium, and has been in place for long haul communication for decades, and these higher performance optical links are needed in the data centers to meet the ever increasing demand and growth of these computer farms. And just as in cellular communications, modulation of the optical signals must become more complex to support more and more data. Working with key strategic systems customers, Inphi has enabled 100 Gb/s 16-QAM to become commonplace in these aggregation points. Recent papers demonstrate 64 QAM running at 64 Gsymbols/s for 600 Gb/s links for a single wavelength and single polarization. Having two polarizations and more wavelengths multiplies the throughput in a single fiber. This talk will focus on what it takes from an electronics point of view to enable more and more aggregation of optical data.



Michael Case (SM 1987) received his PhD in 1993 from the University of California at Santa Barbara where he developed the theory of solitary wave propagation in non-linear transmission lines for harmonic and large-amplitude picosecond impulse generation. He then joined Hughes Research Laboratories (now HRL LLC) developing state-of-the-art MMICs in InP, GaAs and SiGe for low noise, power and frequency conversion covering frequencies from S-band satellite links to sub-mm-wave imaging sensors. In 2001, Mike joined Inphi Corporation, which has been in the forefront of optical communications since its inception in 2000. Industry firsts such as 43 Gb/s CDR DMUX (ISSCC 2003), 28 Gbps CMOS SerDes (ISSCC 2012), and numerous advances in optical receiver and transmitter electronics through press release.

Location

Skyworks Solutions

649 Lawrence Drive, Newbury Park, CA 91320

Intersection of West Hillcrest Drive and Lawrence Drive

(NOT the main building, please use link below to arrow that pinpoints building)

<http://maps.google.com/maps?q=34.187542,-118.930994&num=1&t=h&vpsrc=0&ie=UTF8&z=18&iwloc=A>

Directions

From Los Angeles

Highway 101 North

Take exit 47A for Rancho Conejo Blvd

Use the left lane to turn right onto Rancho Conejo Blvd

Turn left onto W Hillcrest Dr.

Destination will be on the right

From Ventura

Highway 101 South

Take exit 47B for Wendy Dr. toward Newbury Park

Turn right onto N Wendy Drive

Continue onto Camino Dos Rios

Turn right onto W Hillcrest Drive

Destination will be on the left.

