Announcing the Final Examination of Allen Gibson for the degree of Master of Science

Time & Location: October 20, 2011 at 11:00 AM in Harris 438
Title: “Design and Simulation of CMOS RF Active Mixers”

This paper introduces a component of the Radio Frequency transceiver called the mixer. The mixer is a critical component in the RF systems, because of its ability for frequency conversion. This passage focuses on the design analysis and simulation of multiple topologies for the active down-conversion mixer. This mixer is characterized by its important design properties which consist of conversion gain, linearity, noise figure, and port isolation. The topologies that are given in this passage range from the most commonly known mixer design, to implemented design techniques that are used to increase the mixer's important design properties as the demand of CMOS technology and the overall RF system rises. All mixer topologies were designed and simulated using TSMC 0.18 Âµm CMOS technology in Advanced Design Systems, a simulator used specifically for RF designs.

Major: Electrical Engineering

Educational Career:
Bachelor's of Electrical Engineering, BS, 2009, University of Central Florida

Committee in Charge:
Dr. Yuan, Chair, EECS
Dr. Lei Wei, Associate / EECS
Dr. Sundaram, Full / EECS

Approved for distribution by Dr. Yuan, Committee Chair, on October 5, 2011.

The public is welcome to attend.