Introduction

It is getting expensive for people to obtain fiber optic communication in their household. Most people cannot afford fiber communication unless there is a pre-existing network in the city. Depending on the number of cables that is being routed, the average cost for a fiber infrastructure is between $18,000 to $22,000 per mile. [1] A possible alternative would be to use fiber-to-premise technology to provide households with high-speed internet. Fiber-to-premise technology utilizes a central communication hub to direct the flow of information to smaller localized hubs. These localized hubs would beam the information directly to people’s homes. This greatly reduces the amount of cables need to be installed for people to receive high-speed internet. [2]

Design Goals

- Low Power
- 1.2 V input voltage
- 65nm technology
- Operating Frequency range: 57-71 GHz
- 20 dB gain
- Maximum Output Power = 10 dBm

Abstract

This project was to design a 66GHz transmitter on 65nm CMOS technology for point-to-point wireless technology, especially for fiber-to-premise technology. The transmitter was designed to feature similar specifications as others transmitters in the market. This design only features the mixer and power amplifier. The LO and modulator will come from off the shelf chips.

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Key References