

Master 2016

Mostafa Abdallah

Implementation of Transceiver Modules for RF Systems.

ABSTRACT - Masterthesis

In this thesis we investigate the RF system by design RF transmitter front-end of an IQ modulated communication link using the available modular muwave-board system. The system shall operate at 2.4 GHz ISM-Band and must be capable of 100 kBit/s transmission rates. The system should also be analyzed with respect to constellation diagrams and eye-pattern diagrams of the demodulated Rf-signal. All circuits compliant with the mu-board system. I.e. they realized on R04003 substrate using microstrip technology. The size of the circuit shall be 2.5 in by 2.5 in. DC Power of 5V or 3.3V is provided externally.

In this thesis we will Design an Analog Devices Chip Set based PLL Oscillator as Local oscillator then will realize an IQ-Modulator using Minicircuit modules with implementation of filters, pre-amplifiers, power amplifiers.