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OFDM in Radio-Over-Fibre-Systems.

ABSTRACT - Masterthesis

In wireless communication, the demand of the high bandwidth is growing day by day there is increase number of users also. Fiber optics attracted much attention due to its promising performance such as reduced power consumption, low attenuation losses, signal security and extremely wide bandwidth. Fibers are suitable for low loss transmission of radio frequency signal. Therefore, of Radio over Fiber system are useful today for wide range application. In this thesis the Radio signal is transmitted using Orthogonal Frequency Division Multiplexing (OFDM) technique over fiber which is recovered by photo detector and transmitted to the base station. Use of OFDM makes system extremely robust. In OFDM data is divided into number of parallel subcarriers due to which each carrier has low symbol rate and less inter symbol interference. The objective of the thesis is to design, test and implementation of OFDM-RoF system in Software defined Radio network (SDR) is presented using GNU Radio software. Signal processing functions handle by Software defined Radio. There are different parameters are investigated such as effect of inter symbol interference an eye diagram, effect of noise on constellation diagram is observed. The simulation work is done in GNU Radio software.