

ABSTRACT

In recent years telecommunication growth has increased rapidly, so new technology is needed to deal with the problem. One the technologies in the future wireless communication is mm-wave techonology. The number of antennas used in this techonology has resulted in the increase in the RF chain. A more developed technique is needed to support the performance of the system and minimize the amount of RF Chain usage.

Hybrid beamforming technique is used to minimize the use of RF chain. The analysys of this final project is aimed at the effect of the number of antennas, the number of RF chains, with hybrid beamforming performance on rayleigh channels.

From the simulation results when using the parameter number 2x2, 4x4 and 8x8 on a hybrid beamforming system using 2 RF chains, the smallest BER value occurs when using 8x8 antenna, when the Eb/No value of 20 dB has a BER value of $5,41 \times 10^{-5}$. When using RF chain (NRF) parameters of 2, 4, and 6 on a hybrid beamforming system with NRF of 6 has the best BER value of 5.7×10^{-6} . When Eb/No is 5 dB.

Keywords : mmwave, hybrid beamforming