

SPACE COMMUNICATIONS AND NAVIGATION SYMPOSIUM (B2)
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IMPERFECTION OF RF CHANNEL AND THEIR EFFECTS ON BER PERFORMANCE OF
SATELLITE COMMUNICATION

Abstract

Due to limitation of RF devices, there are always some imperfections on channel, such as gain non-linearity, group delay, phase noise, serious output and I/Q imbalance. BER performance will be degraded with the deterioration of these imperfections. The source, effects and test methods are discussed firstly. Then simulation experiments are performed with QPSK 300Mbps. Effect of each imperfections on BER is tested individually and their joint effects are also detailed. Simulation results indicate these imperfection under certain value won't have much effects on BER performance, however, BER performance will be degraded seriously while they increase to a high value. The simulation data can be used as references or guideness for the imperfection index determination for the design of future communication system.