

ABSTRACT

Indonesia is a country has the days of thunder per year which is very high compared with other countries are doing. The density of lightning strikes in Indonesia is also very large, namely $12 / \text{km}^2 / \text{year}$, which means that in every area 1 km^2 has the potential to receive a lightning strike as many as 12 times each year [1]. Indirect lightning strike can induce telecommunications channel, drain (conduction) electromagnetic waves in the telecommunications network in the form of induced voltage is often regarded as noise. Signal noise can interfere with the signal resulting information received Rx information becomes corrupted or incorrect in reading the information.

To minimize the disruption of telecommunications networks, especially the transmission of information signals it is important to know the effects of interference or noise tersbut so unknown factors that can minimize the impact occurred. In this final project using theoretical model calculations rusck, BFSK modulation and AWGN modeling to determine the value of the induced voltage which can degrade the quality of BER and SNR of a communication data.

Results of testing simulation system in this final project shows that the data communication system is not feasible to use when the value of the induced voltage is more than equal to 8.0611 volts and SNR values less than or equal to 1.8721 db, since the value of the produce BER value that does not meet the quality standards of communication data.

Keywords : Induced voltage, BFSK, AWGN, SNR, BER.