

ABSTRACT

Satellites communication have an increasingly important position among wireless communications because of their advantages of low cost and high technology. Satellite communication, especially VSAT IP became the main choice in long-distance communications. Long-distance communications can cause signals that transmitted from satellites to ground stations be susceptible to interference. Every two times in a year, in equinox of March and September, for several days, there is a disturbance in earth station called sun outage or sun transit. Sun outage causes the signal that received by the earth station get weak or even disappear due to the drastically increased noise temperature. The loss signal on the downlink side due to noise affects to the satellite communication system. This research aims to analyze the effect of sun outage on satellite communication system and availability by comparing the Merah Putih satellite communication system in normal conditions and when the sun outage occurs. The research was done by using a descriptive research method based on a case study of the Bogor link as the sending earth station or uplink and the Pontianak link as the receiving earth station or downlink. When After doing a researchs, it was found that there was a comparison between normal conditions and sun outage. The results obtained that there is a decrease in satellite communication system due to the influence of sun outage which is represented by the C/N (Carrier to Noise Ratio) value from 15.56 dB to 11.14 dB, Eb/No (Energy bit per Noise Ratio) from 11.76 dB to 7.34 dB, and BER from 6.42×10^{-7} to 6.75×10^{-5} . At the time of sun outage, availability decreased by 99.76%.

Keywords: VSAT IP, sun outage, equinox, Merah Putih satellite, link budget.