

## ABSTRACT

*In the modernization era of the technology telecommunications is growing very fast. It can't be separated from the Very Small Aperture Terminal (VSAT) technology use or often be known with a satellite technology. VSAT usage also can't be separated of a Modem. Modem Function is converting analog signals into digital signals and vice versa. Modem has same parameters can be changed such as modulation, Forward Error Correction (FEC), type coding. Modulation is one the parameters which can affect bandwidth is available. In VSAT power and bandwidth is very calculated because more to the cost of rent a satellite transponder. Therefore, need to a link budget calculation to know how much effect of the performance modem to power and bandwidth, and to save power and bandwidth requirement need to be calculated to the link before do an installation of a VSAT link network. After being calculated of the link budget the influence of modulation which being used by VSAT modem give greatly effect parameters such as C/N, Eb/No, BER. BPSK modulation with value FEC 5/16 with IR 1024 kbps produce bandwidth 4,4 Mhz with a total C / N of 4.993 dB and Eb / No 11.325 dB and BER  $9.99 \times 10^{-8}$ . BPSK modulation is a modulation that can generate large bandwidth different from 16-QAM modulation with FEC 7/8 and IR 1024 kbps yield 0.394 Mhz bandwidth with total C / N value 11.383 dB and Eb / No 7,238 dB and BER  $6.14 \times 10^{-4}$ . After the link budget calculation the effect of modulation used by VSAT modem, greatly affect parameters such as C / N, Eb / No, BER.*

*Keywords: Very Small Aperture Terminal (VSAT), Modem, Bandwidth, Power, Link Budget, C/N, Eb/No, BER.*