ABSTRACT

Telkom 2 is a GEO satellite whose mission is for communication. In order to know about the Telkom 2 satellite is necessary to know the link budget in advance. In carrying out its mission, the attitude of the satellite needs to be known to the operators who are at the earth station. In practice, the sun sensor is the second sensor used to determine the attitude of the satellite after the earth sensor. As the second sensor to find out the satellite's attitude, a sun sensor is needed, the calculation of the attitude shown by the rotation model sequentially on three axes, yaw, pitch, roll in the order of ZYX rotation. For performance on roll and yaw pitch, the maximum value is roll axis = 0.036^o, pitch = -0.028^o and yaw = -0.149^o. Then for the use of the sun sensor, the observed temperature that occurs on the sun sensor is -24^o <x <70^o c, which means that the temperature monitored on the sun sensor is -24^o C (Celcius) and the maximum temperature received by the sun sensor is 70^o C(Celcius). In an anomalous event that causes the satellite to earth's orientation be lost, and when the satellite tries to find the earth (earth acquisition) is unsuccessful, the satellite will use the sun sensor as a tool to find the sun. And make the sun as a reference for the satellite's attitude.

Keywords: *Sun sensor, three-axis stabilization, link budget*