

ABSTRACT

Ministry of Education and Culture developed a nano-sized satellite technology, or the so-called nanosatellite, with to design Indonesia inter-University Satellite-1 (iINUSAT-1) as a learning tool of space engineering, the universities in Indonesia. These nano satellites orbiting in LEO (Low Earth Orbit) trajectory. This satellite has a primary function for data communication. On the space segment subsystems are RSPL (Remote Sensing Payload) as an image sensor payload following the transmitter (antenna) system that can be used for sensing applications earth's surface.

Based on the above conditions, this research was made of two array of microstrip antenna with a triangular patch. This antenna works on S-band frequency, on 2400-2450 MHz with $VSWR \leq 1.7$. To meet transmittability of data is good, the antenna has designed with gain above 6 dBi, with the transmitting range of 700 km. On the surface of the patch antenna, will be given a gold plating to extend the life of the antenna from corrosion.

From the measurement results, obtained values of VSWR is 1.150 at center frequency in 2.425 GHz for the antenna with the gold plat. Gain obtained from the measurements is 6.120 dBi. This antenna has a transmit pattern of unidirectional and polarized elliptical, circular approach.

Key words: Nanosatellite, Array of microstrip antenna, Triangle patch, S-band, Gain 6 dBi