

ABSTRACT

CALLISTO is a radio spectrometer designed to observe radio waves from the sun's corona. Wire antennas are often used to implement CALLISTO. Log Periodic Antenna is one type of antenna that is widely used for observation because it has an ultrawide band specification that can reach CALLISTO frequencies (45 MHz - 870 MHz).

In this final project a microstrip antenna design and realization can reach CALLISTO frequencies and have a gain of ≥ 8 dBi. The use of microstrip antennas as devices that replace Log Periodic Dipole Antena (LPDA) is new in the case of the solar radio telescope (SRT). Aside from lower manufacturing costs, making microstrip antennas is not difficult. The use of the 2018 CST studio suite software as a radio device simulator helps in the design of a microstrip antenna that will be used in this final project. Microstrip antenna in this final project must have the appropriate specifications. Using the ground as a reflector helps the antenna get a high gain.

Microstrip antenna in this final project has a fractional bandwidth of 125.8% which can be expressed as an ultrawide band antenna. The gain is ≥ 8 dBi in each frequency range received. Measurements were carried out in the antenna and wireless communication laboratory located at Telkom University's Faculty of Applied Sciences. The parameters generated from antenna measurements have values that are almost the same as those in the simulation.

Keywords: CALLISTO, Microstrip Antenna, Ultra Wideband, Defected Ground Structure