ABSTRACT

Bi- Directional Coupler is a component of telecommunications that has a function to reduce an isolation between the transmitter and the receiver nano satellite system, so that the signal receiver is not influenced by the signals coming from the device transmits its own (deep cycle), instead of the reflected signal from the base station transmitter when Bi - Directional sky Coupler used in the device station and otherwise. Bi- Directional Coupler is to be realized are expected to have a 20 dB isolation coupling both to transmit and receiver, and otherwise (Forward and Reverse Coupling Isolation.

In this Final Project conducted research on bi-directional coupler that can be used in nano satellite communications is a joint project (consortium) universities and institutes in Indonesia, which the author designed power divider is expected to be used as a divider lines between the transmitter (TX) and receiver (RX).

Therefore in this final project Designed and Realized Bi - Directional Coupler at a frequency of 2,425 GHz, Bi-Directional Coupler has characteristics that must be met, especially in port coupling will produce a value of ± -20 dB, ≤ -20 dB RL, while the results for ≤ -20 dB port isolation so that the tool can be applied in accordance with the objectives. In the simulation results obtained in accordance bandwidth specifications with return loss of -46.83 dB, isolation of -23.72 dB, coupling of -28.93 dB. The measurement results of Bi-Directional Coupler realized bandwidth within specifications, return loss of -43.12 dB, isolation of -23.08 dB, and the coupling value of -23.68 Db.

Keywords: Isolation, Bi-directional, Receiver and Transmitter