

ABSTRACT

Nowdays, television has become one of the requirements that must fulfilled. You can find out all the latest information by television. However, we often find the unfavorable display of television. This is due to the small power received at the receiving antenna. Therefore, *Low Noise Amplifier* is applied at the receiving antenna which able to strengthen the power at the receiver with low noise in the frequency range of 300 MHz-700 MHz.

This final project designed and realized LNA (*Low Noise Amplifier*) which is operated in the frequency range of 300 MHz-700 MHz. LNA is a stable amplifier (one level) that is designed using unstable transistor (conditionally stable) called BFR 91 A transistor, which is the level of stability must be observed first. while for the matching impedance using passive component of L and C arranged using T and Π topology.

The testing of Low Noise Amplifier performance is conducted by comparing the results obtained from the test results with design specifications. LNA which has been designed from the results of measurements is working in the frequency range of 500 MHz, gain 9,1 dB. This amplifier is working in the frequency range of 450-550 MHz for $VSWR \leq 1.5$, while it means the bandwidth is 100 MHz. Noise figure of LNA is 1.91 dB, and characteristic impedance $51.793 + j 13.089 \Omega$.

Key Words: *Low Noise Amplifier*, matching impedance, *noise figure*.