ABSTRACT

The presence of an amplifier at the receiver device is very important, because it serves as a power amplifier so that the power required optimal receiver. But an amplifier not only amplify the information signals, but also noise from the source and noise generated by the amplifier itself. Therefore we need amplifier design with maximum gain and minimum noise.

In a simple amplifier design, minimum noise and maximum power can not be achieved simultaneously. So that made Low Noise Amplifier (LNA) which is a power amplifier with sufficient gain and a low noise, to the acceptable limits.

In this final project has been designed and realized a LNA prototype from 1667,84-1900,00 MHz with gain above 5 dB, bandwidth of 232.16 MHz, VSWR ≤ 1.5, and at the center frequency (1800 MHz) has 8.34 dB gain and 1.5 dB Noise Figure. LNA is an stable amplifier (one level) that designed using a transistor that is not stable (conditionally stable), BFR-91-A transistor. For passive components (resistors and capacitors) will be realized with discrete components, while the inductor as matching, will be realized by using microstrip line to facilitate the realization and also used as a substrate FR4 epoxy.