

ABSTRACT

In the information transmission system, the existing of an amplifier on receiver equipments is very important. It used as power amplifier so that the power which needed is enough to could be received by receiver. But an amplifier does not only amplify the information signals, but also noise from the source and noise which is produced by the device itself.

To design a simple amplifier, the maximum gain on information signals and the minimum gain on noise signals usually can not be reached together in the same time. Because of it, it should be made Low Noise Amplifier (LNA) which is a power amplifier that has enough power information signal gain and low power noise signal gain, until an acceptable limited value.

In this Last Project, It is designed and realized a LNA Prototype at 2000 ± 500 MHz which has Noise Figure ≤ 2 dB and Gain ≤ 10 dB. This device is a stable amplifier (single class) which is designed using unstable transistor (conditioned stability), BFR 91-A Transistor. For the passives component (Resistors and Capacitors) will be realized with discreet component, while Inductors is used as circuit matcher, will be realized using microstrip to facilitate the realization.

In order to know the LNA performances, it must be done an evaluation, which is done the measurement product with the design specification. From result of measurement, this LNA active at 2004 MHz with gain 9.61 dB and Noise Figure 1.66 dB. These results have a difference of design that is at 2 GHz with gain until 10 dB. For gain > 6 dB, this amplifier active at frequency region 1778 - 2245 MHz or the bandwidth is 467 MHz.