

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 signal which is produced by the device itself.

In this Final Project, It is designed and realized a LNA Prototype at 800 ± 200 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 which has stability rate that must be found before using it. On the other side, the passives component (Inductors and Capacitors) is used as circuit matcher, which is realized using lumped element.

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 816 MHz with gain 9.02 dB and Noise Figure 1.84 dB. This result have a difference of design that is at 800 MHz with gain 10 dB. For $v_{swr} \leq 1.5$, this amplifier active at frequency region 737 - 884 MHz or the bandwidth is 147 MHz.