# *ABSTRACT*

*Digital Video Broadcasting-Second Generation Terrestrial (DVB-T2) is the second generation of DVB-T which is the international standard that overshadows the current implementation of digital television. DVB-T2 is designed to operate in the IV and V frequency bands (470-790MHz). DVB-T2 is carried out in order to overcome the limitations of the existing frequency spectrum, increase capacity, resistance, and its ability to reuse existing receiver antennas. In the DVB-T2 configuration, there is a signal receiver device on the receiver section on the user side. The problem that is often found in all signal receiving devices is the weak signal power received.*

*To overcome this problem, a power amplifier is needed in the receiving system, namely Low Noise Amplifier (LNA) which is placed after the receiver antenna on the receiver side. LNA is required to have large gain value with minimum noise level. This is related to Signal to Noise Ratio (SNR) which will be even greater when the value of the input signal level produced is greater. When the SNR gets bigger, the performance of the communication system will get better. LNA must be designed multistage so that the gain obtained is greater.*

*In this Final Project, LNA was designed and realized using the active component BFR96 BJT transistor with a dual-stage amplifier configuration. In addition, a matching impedance transformer λ/4 technique is used on the input and output sides and a lumped element (capacitor) for interstage matching impedances. LNA is realized to work optimally in the frequency range of 470-790MHz, especially at its middle frequency, which is 630MHz. LNA circuit simulation using Agilent's Advanced Design System (ADS) software. Gain and Noise Figure values obtained respectively, 12.96dB and 4.05dB. In addition, the input and output VSWR values obtained are 3.5674 and 1.7718 respectively.*



***Keywords: DVB-T2, LNA, Television, Gain, Noise Figure.***