ABSTRACT

Synthetic Aperture Radar (SAR) is radar technology for remote sensing which transmits electromagnetic pulse to earth and the pulse is reflected back to SAR and received by antenna. This SAR works in 1.265-1.275 GHz with center frequency 1.27 GHz. Because of low power signal received by antenna, it should be amplified by Low Noise Amplifier (LNA). This Final Assignment design a double stage LNA working in 1.265-1.275 GHz. Transistor used in this Final Assignment is BFP640 which has maximum gain 18 dB and minimum noise figure 0.85 dB. The spesification of LNA is > 20 dB gain. In order to obtain 20 dB gain, LNA should be designed double stage with bilateral design to meet the spesification. Design and simulation are done by *Agilent's Advanced Design System (ADS)* 2015 software. The simulation results of LNA at 1.27 GHz show 40.843 gain and 1.841 noise figure, while input VSWR and output VSWR are 1.077 and 1.075 respectively. Measured LNA at 1.27 GHz produce 28.74 dB *gain*, 3.177 dB *noise figure*, 6.376 *input* VSWR, and 1.498 *output* VSWR.

Keywords: SAR, LNA, gain, noise figure, VSWR.