ABSTRACT

Before SDR (Software Defined Radio) system is developed, communication via radio signal requires a lot of devices that can be used as an antenna, FM transmitters, amplifiers, base stations, and etc. So, the SDR system can be defined as the process of communication through radio waves can be performed using only computer hardware and software. The implementation of this SDR system is for give an alternative on the communication system through the radio waves using a resources of computer and combined with the device called RTL-SDR R2832U and USRP N210 to replace the radio communication device. Therefore this implementation built a system that utilizes the GNU-RADIO and GQRX applications on linux operating system for decode the radio signal and for the capture of the signal using the RTL-SDR device. The function of building this system is for inserted a data or voice information on the radio signal which captured on 25MHz − 1.7GHz frequency and then can be re-transmitted by USRP device.

This system can be a reference on communication development process through a radio signal because this system is built on the open source system and this system is expected to be able to support the process of identifying signals and support the process of communication that uses radio waves in the field of education, the military and other agencies.

Keywords: SDR (Software Defined Radio), RTL-SDR R2832U, GNU-RADIO, GQRX, USRP.