

ABSTRACT

One of application this Software Radio is demodulation process. Before demodulated the receive signal, those signal needs to recognized first. Signal recognition process will yield a conclusion such as modulation scheme type that used by those signal.

This final project will discuss about modulated signal recognition process with analog modulation such as AMDSBFC, AMDSBSC, AMSSBUSB, AMSSBLSB, and FM. Signal recognition process initialed by measurement, feature extraction, and decision part. Measurement is processing to get a moment characters that it can be used as static information of receive signal. Feature extraction uses Ratio method (R), Standard Deviation absolute phase (STD ap), Standard Deviation direct phase (STD dp), and Spectrum symmetry (P). Ratio method (R) will compare the variance of instantaneous amplitud to the mean square. STD ap will calculate standar deviasi of instantaneous phase. P method will compare the power in the left side to the power in the right side.

From the experiment, it gets number 0.5 as threshold for R method, 0.5 for STD ap, 1.6 for STD dp, and 0 for P method. Signal classification process is producing the truth table and tree diagram as reference in signal recognition decision part. Test shows excitement system in recognizing all of type modulation from SNR 1 dB until 50 dB. Nevertheless, the FM modulation stability still influenced by variance of modulating signal. For modulating signal variance 2.0, so the minimum SNR is 10 dB. However it still far below the standard SNR for voice that is 30 dB. Performance of system influenced by number of sample that used to recognizing modulation scheme. Test gets a good minimum number of sample is 2000.