

ABSTRACT

Generally communication system has both transmitter and receiver part. This final project is done in receiver part. Signal which is sent by transmitter will be recognized before being demodulated by it's pair. System will recognize digital modulation type, they are ASK, FSK, BPSK and QPSK.

Recognizing starts from measurement, feature extraction and decision. Measurement part will get instaneous features of the signal, measurement uses complex envelope analysis. Feature extraction part will get unique characteristic signal and decision part will decide what the modulation signal is. Feature extraction uses PSD max, Standard Deviation direct phase, Standard Deviation absolute phase and Standard Deviation frequency. Artificial Neural Network (ANN) is used in decision part.

Simulation results that ANN needs five learning patterns to recognize ASK and QPSK signals but ten learning patterns for FSK and BPSK signals. ANN's configuration with two hidden layer, 160 neuron in each layers, learning rate = 0.05, 40 frames in each feature extractions gives 99.38 % accuration value. Using four feature extractions give mean accuration value 98.228 %, but for three and two feature extractions give both 97.135 % and 92.603 % mean accuration value.

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