

ABSTRACT

Nowadays security and secret becomes very important thing in information technology. It's related with how important a message, data or information will be transmitted or received by the people so it still authenticity. It is not useful again if the information after it is tapped and secret of data will be known other person. How a transmitter can transmit the information with way secure without known other person. Many methods can be done as solution to conquer the problem so sending information become secure and secret. In final project, the writer could realize the data scramble system with frequency hopping spread spectrum principle.

In transmitter, information signal is analog signal will be changed become digital signal by analog to digital converter, then by microcontroller will do control of ADC, parallel to serial converter, adding one byte of header to synchronizations process and scramble of carrier frequency will be provide by frequency synthesizer with programmable divider as controller. The digital signal will be modulated with frequency shift keying (FSK) principle. The carrier frequency will be mixed with signal from output of FSK modulator so produce the hopping signal spread spectrum and ready will be sent. Why it is called frequency hopping because the carrier frequency have changed every time so bandwidth transmission very wide more than the minimum bandwidth to transmit information (FSK bandwidth). In receiver must know the scramble system of transmitter so can get information signal same with transmitter.

With the system, communication that we will between transmitter and receiver will hoped happen with secure, not known other persons, incapable of interference from outside, low probability of intercept (LPI) and efficient in power spectral improvement.