
Abstract

PSTN (*Public Switched Telephone Network*) service that commonly used for voice communication has low security. Voice information transmitted over this network can be easily tapped. Cryptography is one of many techniques for securing voice information over PSTN.

This Final Project design interface that convert voice signal to digital data, before data encryption can be done. After digitalization process, data compression should be done because lack of bandwidth in PSTN. The next process is encryption, before data transmitted to PSTN via a modem.

FPGA mainly used for interfacing and controlling compression block that use AMBE-2000 chip and cryptography block, and interface between cryptography block with modem. Cryptography block designed for flexible algorithm usage. As an example these cryptography blocks use XOR process for encryption and decryption.

Implementation use Xilinx ISE 7.1 software in Xilinx Spartan-IIE XC2S300E-6fg456 FPGA chip, total slice occupied is 287 over 3072 available (9%). Total time delay for data processing, from compression block to modem is 1,0416 mS.

Keyword: voice compression, AMBE-2000, FPGA, PSTN