ABSTRACT

Radio Frequency Identification (RFID) is a technology that uses radio waves as transmission media and it able to identify the product.One of application that use RFID is system of financial transaction or we call it electronic money (e - money). In e – money, balances, customers's bio which need to be assured of its security and confidentiality because there are risk of data falsification and tag clonning. Besides that, the memory that contained in the RFID tag is also limited.

In this final project,a system of protection on RFID-based financial transactions with IDEA encryption and Huffman compression method is designed. Software that used in this final project is Visual Studio 2012 as an interface and SQL Server as a database of e-money. The data that stored on the tag and will be encrypted and compressed are the customer ID, date of transaction, time of transaction and current balance.

From the test results, the average time service is about 1s to encrypted, compressed, read, write, update and delete data from the database use main program. IDEA is good enough for encryption because it have 128-bit keys and 8.5 round. Huffman is good for smartcard compression with its compression ratio 24.1%.

Keyword : RFID, E-Money, Huffman, IDEA