شبكة المعلومات الجامعية

بسم الله الرحمن الرحيم

شبكة المعلومات الجامعية

التوثيق الالكتروني والميكروفيلم

شبكة المعلومات الجامعية

جامعة عين شمس

التوثيق الإلكتروني والميكروفيلم

قسم

نقسم بالله العظيم أن المادة التي تم توثيقها وتسجيلها
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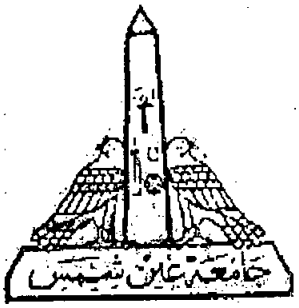
بعض الوثائق الأصلية تالفة



AIN SHAMS UNIVERSITY
FACULTY OF ENGINEERING
Electronics and Communications Engineering Department

Data Communication Ciphering Systems
"Analysis of Block Cipher Systems"

A Thesis

Submitted in Partial Fulfillment for the Requirements
of the Degree of Master of Science in Electrical Engineering
(Electronics and Communications Engineering)

Submitted By

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B.Sc. of Electrical Engineering
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Cairo-2000

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STATEMENT

This dissertation is submitted to Ain Shams University for the degree of Master of Science in Electrical Engineering (Electronics and Communications Engineering)

The work included in this thesis was carried out by the auther at the Electronics and Communications Engineering Department, Faculty of Engineering, Ain Shams University.

No part of this thesis has been submitted for a degree or qualification at other university or institution.

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Abstract

Atef Hosny Soliman. Data Communication Ciphering Systems "Analysis of Block Cipher Systems". Master of Science dissertation, Ain Shams University,

Communication Systems are vulnerable to passive wiretapping (Eavesdropping) which threats secrecy and active wiretapping (Tampering) which threats authenticity. This thesis is devoted to study and analyze Block Cipher techniques applied in Data Communication Ciphering Systems.

Early Cipher Systems including Substitution and Transposition Ciphers are presented. Modern Cipher Systems including Stream Cipher Systems, Block Cipher Systems and Public Key Cryptosystems are studied.

Block Cipher Systems are studied and analyzed. A Complete package of different elements which affect the security level of Block cipher Systems is presented in this thesis.

A Complete package of the significant statistical tests for local Randomness is presented in this thesis including mathematical description.

A new proposed method to build up dynamic

Look-Up-Tables (S-boxes) changing with every change of the secret key is presented in this thesis, in addition to the computer simulation programs. This new approach will lead to build up more secure Block Cipher Systems with dynamic change S-boxes and consequently solve the problem of the fixed structure Block Ciphers.