



COLLEGE OF ENGINEERING & TECHNOLOGY

Department: Electronics and Communications Engineering, Cairo

Graduation Project Description Form

Project Supervisor(s): Dr. Hanady Hussien.

Project Title: Design and implementation of security algorithm for UMTS Third Generation Cellular Networks.

Duration from 9/2013 _____ till 7/2014 _____

Product Category

Algorithm _____ Hardware _____ Software _____

Standards:

Safety: UL, CE _____ IEEE _____ FCC _____

Other _____

Practical Realization Form

PCB _____ Firmware _____ Embedded CPU Kit (ARM, ..etc): _____

PC Software _____ Ready-made Package _____ DSP Kit _____ FPGA Kit

VLSI Schematics _____ VLSI Layout _____ VLSI Silicon (ASIC) _____

Language



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VHDL/Verilog Matlab C/C++/Java _____

Productization

Finished Product Form: _____ Possible Commercialization _____

Amount of funds needed for buying components: _____

IEEE GOLD Made-In-Egypt/Engineering Day: _____

ITAC (ITIDA) or NTRA Funding Application: _____

Testing

Functional Simulation Parameters _____ Final Hardware Other: _____

Lab Test Setup

EMC _____ Environmental _____ Microwave _____ Analog Lab _____ Other: _____

CAD Tools *(No unauthentic software is allowed):*

Elective Classes Required:

EC 535 Digital VLSI Design



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Abstract

In cellular networks there is a great interest in providing technologies that achieves a high speed transmission data. The Third generation 3G is wireless networks represent the more recent stage in this evolutionary process. They afford a high bandwidth which allows users to send both audio and video information. Universal Mobile Telecommunications System (UMTS) is one of the most important proposals for 3G. In order to protect the information transmitted, advanced_security schemes were provided.

The aim of this project is to design and implement a security algorithm for UMTS on a field programmable gate array (FPGA). It is an integrated circuit which is configured by special language named a very high speed hardware description language (VHDL),



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References and Links