

## Electronic Protection for Exam Paper Wallet

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**Abstract-** Examination is an assessment intended to measure the knowledge, skills, aptitude, and physical fitness or administered orally, on paper, on a computer or in a confined area that requires an examinee to physically perform a set of skills. The history of examination is very wide. Many times the leakage of question papers will not be known to the universities. In such conditions some students get good ranks by these leaked papers and those students who had worked hard have to compromise with less rank. This factor will have negative effect on the growth of the society. Thus by considering the problems faced by the students and society a system has to be implemented which will help to detect and prevent the leakage of question papers.

This system involves the integration of certain electronic peripherals that work on technologies based on GSM, I2C, UART, etc. To stop the malpractice of question paper leakage, we propose a system called “ELECTRONIC PROTECTION FOR EXAM PAPER WALLET”.

In this system the question papers will be sent to the examination centers in the electronically locked boxes. The boxes will be opened by authentic user only on predefined date and time. Unauthorized users can't open box and if they try to open the box immediately a message will be sent to the University and appropriate actions should be taken.

**Index Terms-** GSM, I2C, UART, WALLET

### I. INTRODUCTION

An embedded system is a special-purpose system in which the computer is completely encapsulated by or dedicated to the device or system it controls. Unlike a general-purpose computer, such as a personal computer, an embedded system performs one or a few predefined tasks, usually with very specific requirements. Since the system is dedicated to specific tasks, design engineers can optimize it, reducing the size and cost of the product. Embedded systems are often mass-produced, benefiting from economies of scale.

Personal Digital Assistants (PDAs) or handheld computers are generally considered embedded devices because of the nature of their hardware design, even though they are more expandable in software terms. This line of definition continues to blur as devices expand. With the introduction of the OQO Model 2 with the Windows XP operating system and ports such as a USB port

— both features usually belong to "general purpose computers",  
— the line of nomenclature blurs even more.

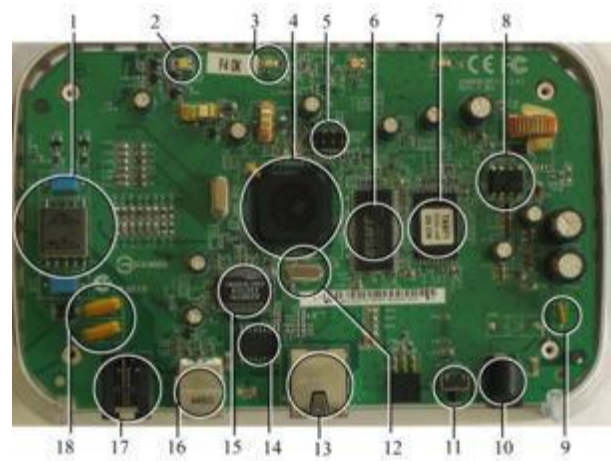


Fig1: Embedded system

Embedded systems play a major role in electronics, varying from portable devices to large stationary installations like digital watches and MP3 players, traffic lights, factory controllers, or the systems controlling nuclear power plants.

In terms of complexity, embedded systems can range from very simple with a single microcontroller chip, to very complex with multiple units, peripherals and networks mounted inside a large chassis or enclosure.

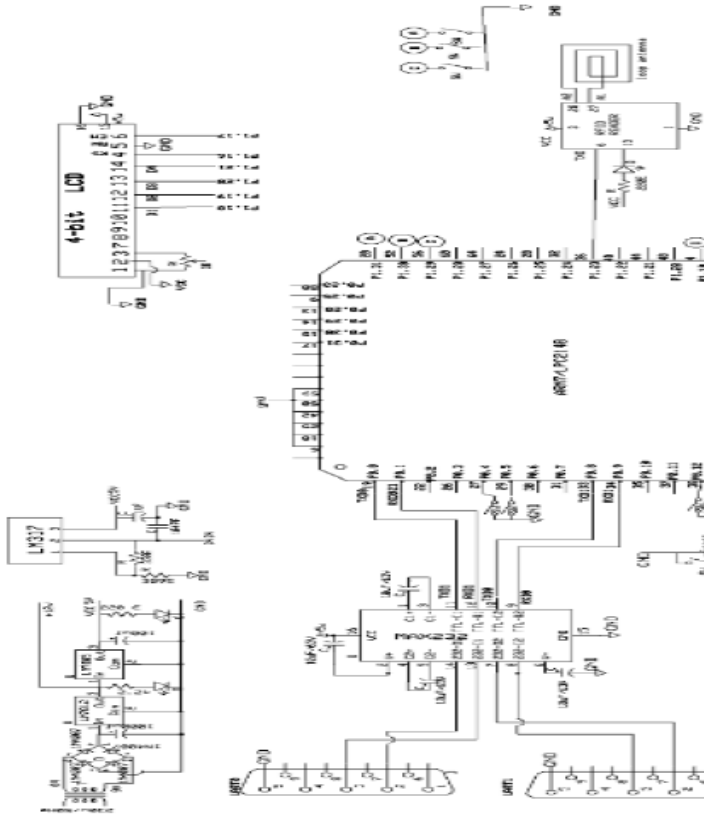
### II. EXISTING WORK OR LITERATURE SURVEY

Examination is an assessment intended to measure the knowledge, skills, aptitude, and physical fitness or administered orally, on paper, on a computer or in a confined area that requires an examinee to physically perform a set of skills. The history of examination is very wide. Many times the leakage of question papers will not be known to the universities. In such conditions some students get good ranks by these leaked papers and those students who had worked hard have to compromise with less

rank. This factor will have negative effect on the growth of the society Thus by considering the problems faced by the students

and society a system has to be implemented which will help to detect and prevent the leakage of question papers.

### III. WRITE DOWN YOUR STUDIES AND FINDINGS(PROPOSED WORK)



**Explanation:**

Here we required operating voltage for ARM controller board is 12V. Hence the 12V D.C. power supply is needed for the ARM board. This regulated 12V is generated by stepping down the voltage from 230V to 18V now the step downed a.c voltage is being rectified by the Bridge Rectifier using 1N4007 diodes. The rectified a.c voltage is now filtered using a 'C' filter. Now the rectified, filtered D.C. voltage is fed to the Voltage Regulator. This voltage regulator provides/allows us to have a Regulated constant Voltage which is of +12V. The rectified; filtered and regulated voltage is again filtered for ripples using an electrolytic capacitor 100µF. Now the output from this section is fed to microcontroller board to supply operating voltage.

LCD is connected to pin 16 to 21.  
RFID is connected to UART0  
GSM is connected to UART1

Motors are connected to pins

**VECTORED INTERRUPT CONTROLLER:**

**Features:**

- 1) ARM Prime Cell Vectored Interrupt Controller
- 2) 32 interrupt request inputs
- 3) 16 vectored IRQ interrupts
- 4) 16 priority levels dynamically assigned to interrupt requests
- 5) Software interrupt generation

**Description:**

- 1 The Vectored Interrupt Controller (VIC) takes 32 interrupt request inputs and programmable assigns them into 3 categories, FIQ, vectored IRQ, and non-vectored IRQ.
- 2 The programmable assignment scheme means that priorities of interrupts from the various peripherals can be dynamically assigned and adjusted.
- 3 Fast Interrupt reQuest (FIQ) requests have the highest priority. If more than one request is assigned to FIQ, the VIC ORs the requests to produce the FIQ signal to the ARM processor.

The fastest possible FIQ latency is achieved when only one request is classified as FIQ, because then the FIQ service routine can simply start dealing with that device.

- ❖ But if more than one request is assigned to the FIQ class, the FIQ service routine can read a word from the VIC that identifies which FIQ source(s) is (are) requesting an interrupt.
- ❖ Vectored IRQs have the middle priority, but only 16 of the 32 requests can be assigned to this category.
- ❖ Any of the 32 requests can be assigned to any of the 16 vectored IRQ slots, among which slot 0 has the highest priority and slot 15 has the lowest.
- ❖ Non-vectored IRQs have the lowest priority.
- ❖ The VIC ORs the requests from all the vectored and non-vectored IRQs to produce the IRQ signal to the ARM processor. The IRQ service routine can start by reading a register from the VIC and jumping there. If any of the vectored IRQs are requesting, the VIC provides the address of the highest-priority requesting

IRQs service routine, otherwise it provides the address of a default routine that is shared by all the non-vectorized IRQs.

- ❖ The default routine can read another VIC register to see what IRQs are active.
- ❖ All registers in the VIC are word registers. Byte and half-word reads and write are not supported.
- ❖ Additional information on the Vectored Interrupt Controller is available in the ARM

## UNIVERSAL ASYNCHRONOUS RECEIVER/TRANSMITTER 0:



When we give power supply to the system to shows a message in LCD display saying "welcome to the project". Then if the authorized person tries to open then the box opens and a message will be displayed as "Person 1".

When an unauthorized person try to open the box using any tag then the box will not open and immediately a message will be sent to the university giving the details of date and time at which the box is tried to open.

## V. CONCLUSION

The project **“ELECTRONIC PROTECTION FOR EXAM PAPER LEAKAGE”** has been successfully designed and tested.

Integrating features of all the hardware components used have developed it. Presence of every module has been reasoned out and placed carefully thus contributing to the best working of the unit. Secondly, using highly advanced IC's and with the help of

## Features:

- 16 byte Receive and Transmit FIFOs
- Register locations conform to '550 industry standard
- Receiver FIFO triggerpoints at 1, 4, 8, and 14 bytes
- Built-in fractional baud rate generator with auto-bauding capabilities.
- Mechanism that enables software and hardware flow control implementation

## IV. RESULTS AND DISCUSSION(IF ANY)

growing technology the project has been successfully implemented.

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