

## An efficient and secured accessing system with surveillance

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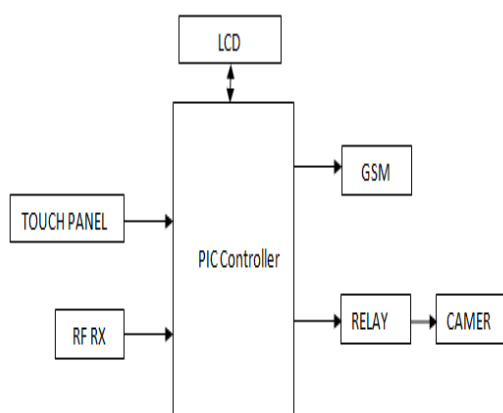
**ABSTRACT:** This project presents the design and implementation of a technique to transmit information through a capacitive touch screen. Our method triggers transmitted events in to the touch screen device by injecting an RF electric signal that affects the capacitance measurements of the screen. This concept exploits the capacitive touch screens, which are now used in laptops, phones, and tablets, as a signal receiver. The signal that identifies the user can be generated by a small transmitter like RF transmitter. Advanced wireless touch screen authentication activation is provided with more security in valuable devices with RF. RF wireless communication is provided for authentication purpose. Touch screen will be activated, if wireless communication is establishes along with correct password. User defined data can be sent to mobile using keypad through RF.

**KEYWORDS:** Capacitive touch, RF, Relay, PIC16F877A, Wireless Camera, Touch screen,Authontication

**INTRODUCTION:** MOBILE devices now provide us ubiquitous access to a vast array of media content and digital services. They can access our e-mails and personal photos, open our cars or our garage doors , pay bills, and transfer funds between our bank accounts, order merchandise, as well as control our homes [2]. Arguably, they now provide the de facto single sign on access to all our content and services, which has proven so elusive on the web. As we increasingly relay on a variety of such devices, we tend to quickly switch between them and temporarily share them with others [3]. We may let our children play games on our smart phones or share a tablet with colleagues or family members. Sometimes a device may be used by several persons simultaneously, as when playing a multiplayer game on a tablet, and occasionally, a device might fall into the hands of strangers. In all these situations, it would be of great benefit for the device to know who is interacting with it and occasionally to authenticate the user. We may want to limit access to ageappropriate games and

media for our children or prevent them from charging our credit card.<sup>1</sup> We desire to hide sensitive personal information from strangers, colleagues, or perhaps even an curious spouse. Or, we may simply want to enjoy an enhanced user experience from the multiplayer game that can tell who touched the screen. Unfortunately, user identification and authentication mechanisms available on today's mobile devices have been largely adopted from PC software and have not followed the versatility of the usage and sharing possibilities. For example, several mobile devices (e.g., iPad or iOS devices) do allow to restrict access to device functions, but the devices do not provide any easy way to quickly change, let alone authenticate, users. They provide PIN codes, passwords, for authentication, and a number of other techniques have been proposed by researchers [7]. Yet they remain cumbersome and very few people enable these security features on their phones. Handwriting offers advantages over typing for personal communication. Handwritten notes contain

subtle personal cues through writing style and drawings that cannot be expressed by typed text. Many of today's communication devices—notably smartphones and tablet computers—have touchscreens capable of recording handwriting, and several commercial applications employ handwriting for note taking and messaging. Unfortunately, handwriting on a touchscreen requires either a stylus, or a surface large enough for a finger to write with sufficient precision. This poses a problem for the small screens of mobile devices. Touch screen technology was first developed in the 1960s for air traffic control systems [6] and is now a popular user interface technology on devices ranging from ATMs and self-service terminals in grocery stores or airports, to cars, smartphones, and tablets. Even the touchpads used in laptops are based on similar technology. These products employ different touch screen implementations, including analog resistive, surface capacitive, projected capacitive, surface acoustic wave, infrared, and optical technology to mention a few. On mobile devices, however, capacitive touch screens have emerged as the main technology and we focus our work on those.



This project works in two cases. In, Case1 RF receiver receives a signal from transmitter. This is casual case, means everything goes in fine aspect. In this authorized case, touch will be activated and functions go in well manners. In case2 receiver doesn't receives a signal from RF transmitter. This unauthorized case is considered as false case and in this case if user tries to touches the touch screen, automatically a warning message will be sent to authorize mobile number. Sequentially, camera will be on through relay.

#### PIC16F877A:

- High-performance RISC CPU
- Only 35 single word instructions to learn
- All single cycle instructions except for program branches which are two cycle
- Operating speed: DC - 20 MHz clock input DC - 200 ns instruction cycle
- Up to 8K x 14 words of Flash Program Memory, Up to 368 x 8 bytes of Data Memory (RAM)
- Up to 256 x 8 bytes of EEPROM data memory
- Pin out compatible to the PIC16C73/74/76/77
- Interrupt capability (up to 14 internal/external)
- Eight level deep hardware stack
- Direct, indirect, and relative addressing modes
- Power-on Reset (POR)
- Power-up Timer (PWRT) and Oscillator Start-up Timer (OST)
- Watchdog Timer (WDT) with its own on-chip RC Oscillator for reliable operation
- Programmable code-protection
- Power saving SLEEP mode
- Selectable oscillator options
- Low-power, high-speed CMOS EPROM/EEPROM technology
- Fully static design
- In-Circuit Serial Programming (ICSP) via two pins
- Only single 5V source needed for programming capability
- In-Circuit Debugging via two pins
- Processor read/write access to program memory

Wide operating voltage range: 2.5V to 5.5V • High Sink/Source Current: 25 Ma • Commercial and Industrial temperature ranges • Low-power consumption:

**PERIPHERAL FEATURES:** • Timer0: 8-bit timer/counter with 8-bit prescaler • Timer1: 16-bit timer/counter with prescaler, can be incremented during sleep Via external crystal/clock • Timer2: 8-bit timer/counter with 8-bit period register, prescaler and postscaler • Two Capture, Compare, PWM modules Capture is 16-bit, max resolution is 12.5 ns, Compare is 16-bit, max resolution is 200 ns, PWM max. Resolution is 10-bit • 10-bit multi-channel Analog-to-Digital converter • Synchronous Serial Port (SSP) with SPI. (Master Mode) and I2C. (Master/Slave) • Universal Synchronous Asynchronous Receiver Transmitter (USART/SCI) with 9- Bit addresses detection. • Brown-out detection circuitry for Brown-out Reset (BOR).

**TOUCH PANNEL:** Touchscreen technology is the direct manipulation type gesture based technology. Direct manipulation is the ability to manipulate digital world inside a screen without the use of command-line-commands. A device which works on touchscreen technology is coined as Touchscreen. A touchscreen is an electronic visual display capable of 'detecting' and effectively 'locating' a touch over its display area. It is sensitive to the touch of a human finger, hand, pointed finger nail and passive objects like stylus. Users can simply move things on the screen, scroll them, make them bigger and many more.

**RF:** The RF module, as the name suggests, operates at Radio Frequency. The corresponding frequency range varies between 30 kHz & 300 GHz. In this RF

system, the digital data is represented as variations in the amplitude of carrier wave. This kind of modulation is known as Amplitude Shift Keying (ASK). Transmission through RF is better than IR (infrared) because of many reasons. Firstly, signals through RF can travel through larger distances making it suitable for long range applications. Also, while IR mostly operates in line-of-sight mode, RF signals can travel even when there is an obstruction between transmitter & receiver.

**GSM:** SM/GPRS module is used to establish communication between a computer and a GSM-GPRS system. Global System for Mobile communication (GSM) is an architecture used for mobile communication in most of the countries. Global Packet Radio Service (GPRS) is an extension of GSM that enables higher data transmission rate. GSM/GPRS module consists of a GSM/GPRS modem assembled together with power supply circuit and communication interfaces (like RS-232, USB, etc) for computer. The MODEM is the soul of such modules.

**L.C.D:** The LCD is used for the purpose of displaying the words which we are given in the program code. This code will be executed on microcontroller chip. By following the instructions in code the LCD display the related words. A liquid crystal is a material (normally organic for LCDs) that will flow like a liquid but whose molecular structure has some properties normally associated with solids. The Liquid Crystal Display (LCD) is a low power device. The

power requirement is typically in the order of microwatts for the LCD. However, an LCD requires an external or internal light source. It is limited to a temperature range of about 0°C to 60°C and lifetime is an area of concern, because LCDs can chemically degrade.

#### RESULT:



#### CONCLUSION:

Finally, this innovative concept is implemented and designed using PIC16F877A, Touch panel, GSM and RF Transceivers. Along with all assembling, I conclude a new approach to defend against unauthorized reading and relay attacks in all secured applications. Transmission of information via small physical tokens can be used to distinguish who is interacting with a mobile device, and can be useful for parental control, multiuser games (particularly when played on a single device), and possibly play a role in authentication solutions. This enhanced block

argued the feasibility of our approach in terms of both technical and economical aspects.

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