

Locking and Unlocking of Theft Vehicles

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Abstract:

Security is prime concern for every one. Nowadays all the automotives are equipped with auto cop systems. Even though, the thieves are breaking the barriers and steal the vehicles. This project is the right solution for this problem. Using this project, one can control his vehicle's car engine by means of an SMS. There are various electronic equipment available for remote operation of device control.

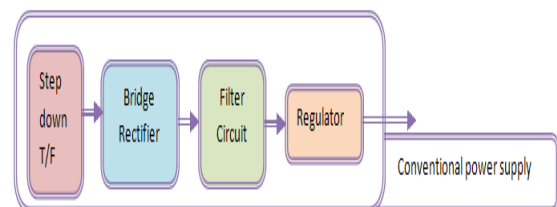
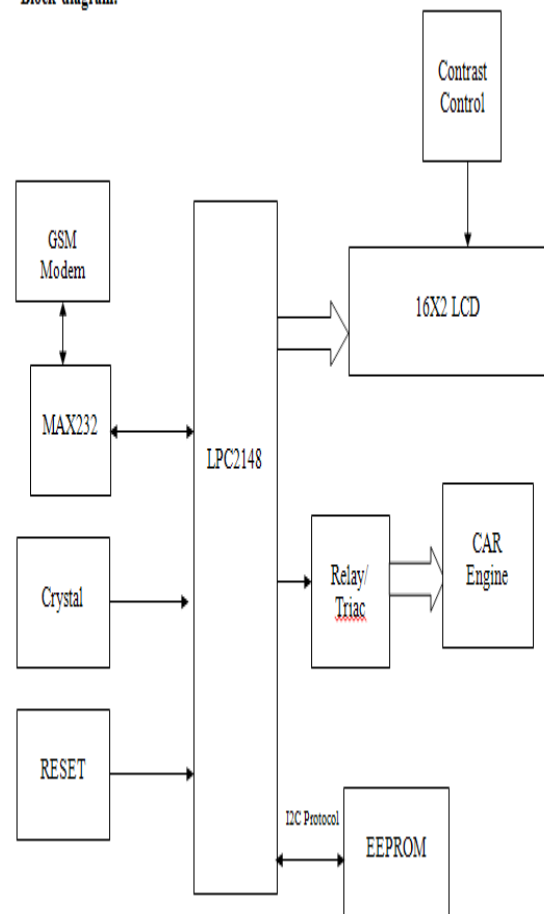
However, the main disadvantage of these systems is that they can be operated only from short ranges and also less reliable. Thus, to overcome the above drawbacks, we are using one of the wireless communication technique i.e., GSM (Global System for Mobile communications) is a digital cellular communications system which has rapidly gained acceptance and market share worldwide.

I. Introduction:

LPC2148 is the heart of the project. A GSM modem is interfaced to microcontroller. This modem receives the messages from control mobile and sends as input to MCU. The MCU verify for authentication of the number and, if the number is authorised, engine control will be taken place, EEPROM is interfaced to this controller to save the engine position at every instant. This engine position information will not be deleted even in power failure conditions. 16X2 LCD is interfaced to display user-required information.

GSM network operators have roaming facilities, user can often continue to use there mobile phones when they travel to other countries etc. This project uses regulated 5v, 750mA power supply. 7805 and 7812 three terminal voltage regulators are used for voltage regulation. Bridge type full wave rectifier is used to rectify the ac output of secondary of 230/12v step down transformer.

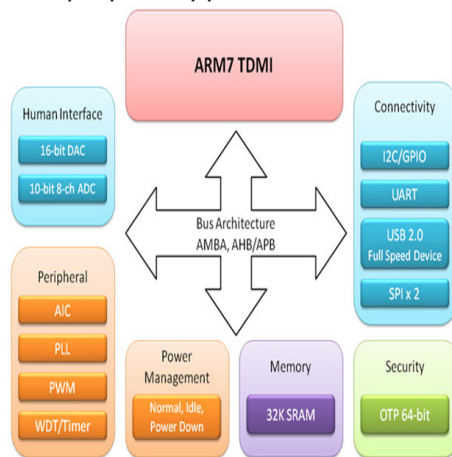
Block diagram:



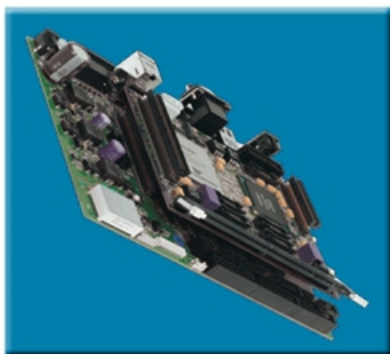
II. Hardware requirements:

The LPC2148 are based on a 16/32 bit ARM7TDMI-S™ CPU with real-time emulation and embedded trace support, together with 128/512 kilobytes of embedded high speed flash memory.

A 128-bit wide memory interface and unique accelerator architecture enable 32-bit code execution at maximum clock rate. For critical code size applications, the alternative 16-bit Thumb Mode reduces code by more than 30% with minimal performance penalty. With their compact 64 pin package, low power consumption, various 32-bit timers, 4- channel 10-bit ADC, USB PORT, PWM channels and 46 GPIO lines with up to 9 external interrupt pins these microcontrollers are particularly suitable for industrial control, medical systems, access control and point-of-sale. With a wide range of serial communications interfaces, they are also very well suited for communication gateways, protocol converters and embedded soft modems as well as many other general-purpose applications.



ARM PROCESSOR:



ARM7TDMI Processor Core

- Current low-end ARM core for applications like digital mobile phones
- TDMI

oT: Thumb, 16-bit compressed instruction set
oD: on-chip Debug support, enabling the processor to halt in response to a debug request

- oM: enhanced Multiplier, yield a full 64-bit result, high performance
- oI: Embedded ICE hardware
- Von Neumann architecture

LCD:

LCD stands for Liquid Crystal Display. LCD is finding wide spread use replacing LEDs (seven segment LEDs or other multi segment LEDs) because of the following reasons:

- 1.The declining prices of LCDs.
- 2.The ability to display numbers, characters and graphics. This is in contrast to LEDs, which are limited to numbers and a few characters.
- 3.Incorporation of a refreshing controller into the LCD, thereby relieving the CPU of the task of refreshing the LCD. In contrast, the LED must be refreshed by the CPU to keep displaying the data.
- 4.Ease of programming for characters and graphics. These components are “specialized” for being used with the microcontrollers, which means that they cannot be activated by standard IC circuits. They are used for writing different messages on a miniature LCD.



TRIAC :

TRIAC, from Triode for Alternating Current, is a genericized trade name for an electronic component which can conduct current in either direction when it is triggered (turned on), and is formally called a bidirectional triode thyristor or bilateral triode thyristor.

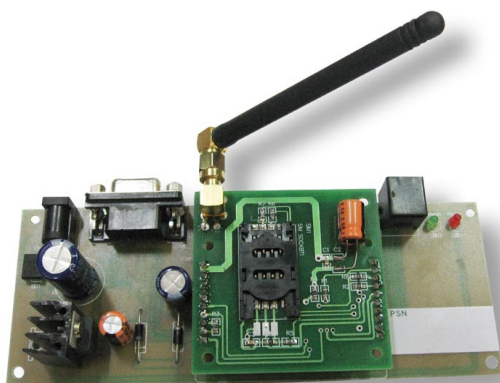
Global System for Mobile Communication (GSM) Definition:

GSM, which stands for Global System for Mobile communications, reigns (important) as the world’s most widely used cell phone technology.

Cell phones use a cell phone service carrier's GSM network by searching for cell phone towers in the nearby area. Global system for mobile communication (GSM) is a globally accepted standard for digital cellular communication. GSM is the name of a standardization group established in 1982 to create a common European mobile telephone standard that would formulate specifications for a pan-European mobile cellular radio system operating at 900 MHz. It is estimated that many countries outside of Europe will join the GSM partnership.

TABLE I. SOME COMMANDS USED IN GSM DATA TRANSFER MODULE OF THE SYSTEM

AT Command	Meaning
+CMGI	Module ok
+CMGS	Send message
+CMGW	Write message to memory
+CMGD	Delete message
+CMGC	Send command
+CMSS	Send message from storage



III. Software requirements:

A. Keil compiler:

Keil compiler is a software used where the machine language code is written and compiled. After compilation, the machine source code is converted into hex code which is to be dumped into the microcontroller for further processing. Keil compiler also supports C language code.

B. Proload:

Proload is a software which accepts only hex files. Once the machine code is converted into hex code, that hex code has to be dumped into the microcontroller placed in the programmer kit and this is done by the Proload.

Programmer kit contains a microcontroller on it other than the one which is to be programmed. This microcontroller has a program in it written in such a way that it accepts the hex file from the keil compiler and dumps this hex file into the microcontroller which is to be programmed.

IV. Advantages:

Vehicle can be controlled from any where
Mobile number can be changed at any time
Status will not be lost in power failure condition

V. Applications:

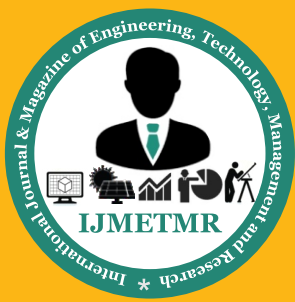
Automotives Security

VI. Conclusion:

In this project work, we have studied and implemented a complete working model using a Microcontroller. Using this project, one can control his vehicle's car engine by means of an SMS.

VII. References:

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