

Redneck OnStar®

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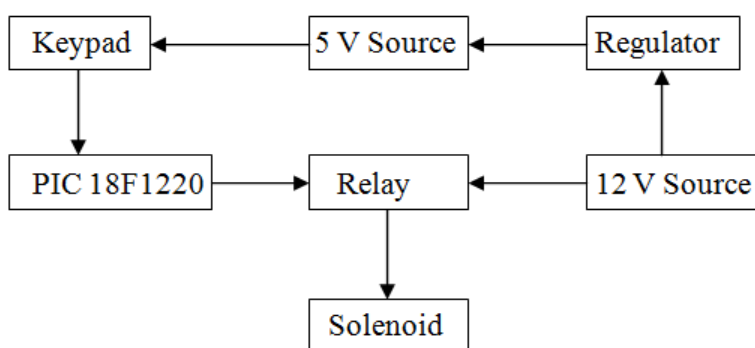
ENGR 252 (03/18/2013)

Problem Definition

- **How to get into a locked car without keys?**
- Our design plan will use an external keypad mounted on the door of your car to allow for a key code entry that will unlock your car door.
- Currently we have a 12V source that is converted to 5V, via a regulator, which runs the microprocessor with our assembly code. When the correct unlock code is entered, a relay is triggered that uses the 12V source to actuate a 12V solenoid. By the end of Spring Qtr. 2013, our plan is to replace the 8-pin switch with a programmable keypad that will provide a more polished presentation.
- Resources include electronics purchased at Radio Shack, Digi-Key and access to a programmable PIC kit and other components.

Solution Specifications

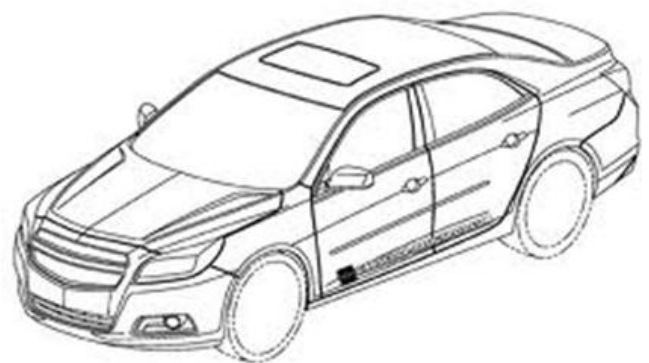
Solution Block Diagram



- Typing in the proper combination code will unlock the car door.
- Component specifications include a PIC Microprocessor chip, proto board, keypad components, diodes, relays, and wires.

Competitive Analysis

- Compared with OnStar's basic \$20 a month fee, this system will have no monthly service charge.
- After the initial cost for the materials and installation, the service is free. The largest cost so far has been a keypad for \$29.
- It is not necessary to communicate with a third party for the service to unlock your car door.
- Comparable devices start at around \$80 for the keypad and module but do not include installation which can cost upwards of \$200.



Potential Applications

- This product can easily be adapted for trucks, homes, garages, boats, planes, trains, and some tree houses.

Future Improvement Ideas

- Future options include an alarm for improper code entry.
- Reprogrammable code entry.
- Possible Blue Tooth adaptation in place of keypad.