

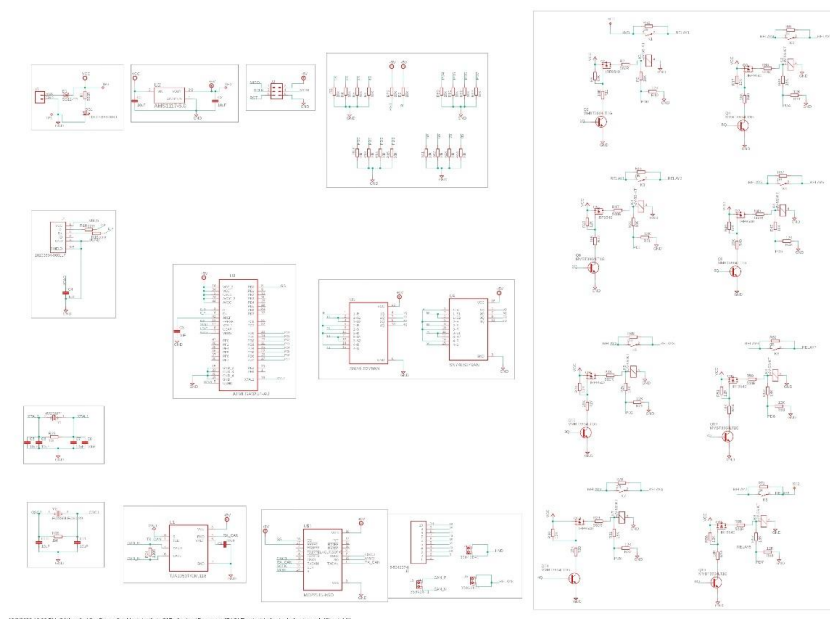
Susan Futures Technologies Internship Report

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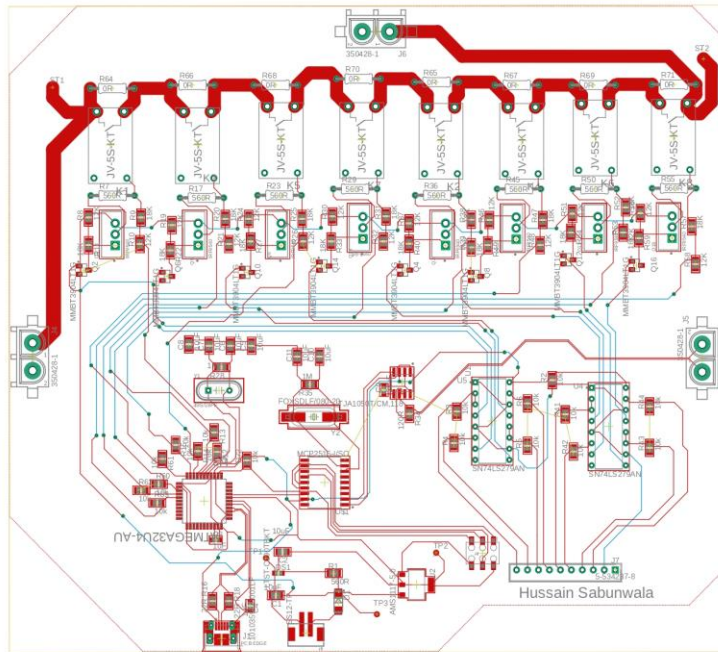
As I am part of a club that manufactures and designs a Formula race Car in my college, I had designed a Relay system powered by a Atmega32u4 and with a CANBUS compatibility due to using MCP2515 as the CAN controller.

Its main design parameters are as follows:

- The relay box is powered using a Atmega32u4 to monitor the state of the shutdown systems. The MCU is also used to put the relay box onto the CAN bus. This enables the control systems of the car to also know the shutdown state and lets us convey the fault to the driver via the driver interface.
- The Relay Box was made to ensure the fast acting of the relays to activate the vehicle's safety systems and notify the driver regarding which relay corresponding to which safety system has been activated.
- The microcontroller is programmed using a USART protocol via a USB socket placed on the PCB. This would allow the user to test the relay system for quality assurance.
- The microcontroller will be in direct communication with the CAN Controller which will be transmitting its information via the CAN transceiver. This allows the Relay system to be integrated into the CANBUS System of the Vehicle and would allow for a Data Acquisition System for the Vehicle

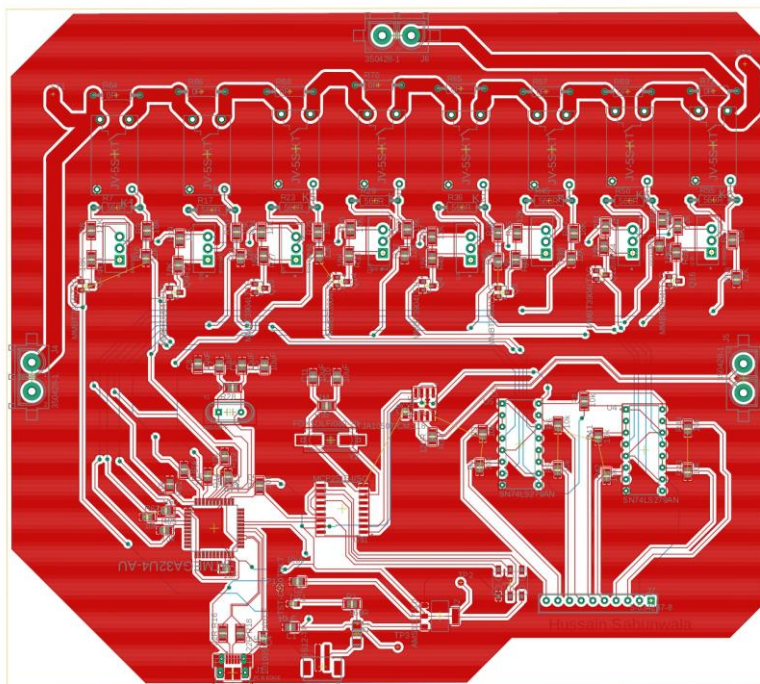


Relay Board Schematic



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Relay Board PCB



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Relay board With GND Plane