SUNSTANG NEWSLETTER

CONQUERING THE ROAD ONE SOLAR CELL AT A TIME.

"A river cuts through a rock not because of its power, but because of its persistence."

QUOTE OF THE MONTH

PCB DESIGN PROGRESS

The Low-Power Team has gone back to completing the 2019-2020 vehicle in anticipation of re-gaining access to the workshop in the new year. As of now, the team is converting schematics previously made using Eagle to the new Altium Designer software. Altium Designer is a well-known schematic and Printed Circuit Board (PCB) design software which is very user-friendly and offers more resources to users than most of its competitors.

Our Low-Power members have also been working on editing the old PCB designs so they are less complex to read, which will improve information transfer from year to year. The team has been verifying the old design and investigating what components they have and still require to complete the physical boards. The end goal is to complete last year's PCB's and schematics in Altium and partner with one of our generous sponsors to physically print the boards.

After printing, the team will solder on the components of the board and, finally, when the PCB's are assembled, the team will test the voltage regulation, micro-controller, and begin to assess the performance of the CAN Bus on the PCB's as well.

For your knowledge...

The microcontroller is the Atmega which comes from the Arduino development boards, it is a very small integrated circuit that can take in signals and output signals based on a specific set of instructions we give it.

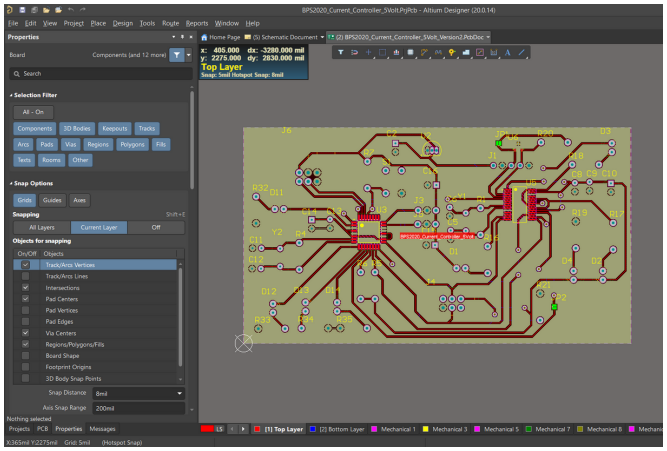
The CAN bus is the controller area network which is a protocol commonly used in vehicles since the messages can be sent over long ranges. Multiple boards are hooked up to a two wire line, CANH and CANL. When messages are being sent across the line there are specific voltage drops across CANH and CANL that allow the CAN controllers on each board to read the messages being sent across the line. In general, one board can send a message across the CAN line at a time but all the boards can read the message so long as it has a CAN controller attached to the line.

PROJECT FUND

Our External Affairs Lead, Fisal Faroukh, and Operations Manager, Tashmia Anwar, successfully secured funds from the University Engineering Society (UES) at the end of November. Thanks to their hard work on the Project Fund Application, Sunstang has been approved for funding and now has $20k available for car-related expenses.

Our Project Manager, Steven Lawrence, and members of the Strategy Team have been allocating these funds appropriately to cover costs across all sub-teams. Specifically, the funds will be used for prototyping designs for our new vehicle (Sunstang 2022) which has never been done before, purchasing new motor-controllers, motors, and tires.

We are thankful to the UES for this funding and cannot wait to return to our workshop after nearly 10 months of working from home.



Pictured: Schematic using Altium Designer