



# SUNSTANG NEWSLETTER

CONQUERING THE ROAD ONE SOLAR CELL AT A TIME.

*Many will start fast, few will finish strong.*

QUOTE OF THE MONTH

## RETURNING TO THE SHOP

Some of our leads were *finally* able to return to the shop during December (pre-lockdown). The team was hard at work during the short week but were able to make significant progress on last year's car!

The team was able to tidy up the shop after the unanticipated shut-down of the University in early 2020. The team was able to take inventory of the shop to assess what materials and components we had available. Visual documentation in the form of videos was used to share with the rest of the team who were not able to come into the shop.

The team is eager to get back to work on last year's vehicle but due to the new lockdown restrictions, we had to cease operations once again. Once Western deems it safe to return, we will continue our work as before.

## SUNSTANG 2020 STRUCTURES WRAP-UP

The Structures team has made incredible progress with finalizing their plan for the Sunstang 2020 vehicle.

They were able to design some modifications for the chassis to improve mounting for suspension, improving structural supports and incorporating full door. Full doors are the main improvement as this will allow easier egress from and entry to the vehicle.

As well, the team finalized a design for the hinges and latches which will operate the trunk. The hinges and latches ensure the trunk will remain closed but also allow for a change of orientation in the solar array to improve charging capabilities.

The Structures and High Power teams have also been collaborating with concept generation for the battery box ventilation. Their task was to ensure that the battery pack will be cooled effectively without drastically reducing the aerodynamics of the car.

Finally, the team finalized a detailed design of the Ballast Box which will be used to hold the extra ballast for each passenger and serve as a console with cup holders between the passengers.

## LOW-POWER DATA TRANSFER

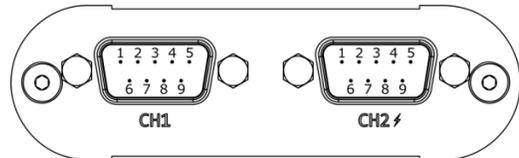
Low-power has been looking at how to save the data being collected from the battery management system and send it outside the vehicle to a chase car so data can be analyzed by people outside of the main car.

So far the team has discovered that CANedge has the potential of taking data directly off the battery monitoring system CAN line and sending it to a remote device via the internet. Some questions still remain as to how the team would get the funding to implement such a device or how using a wireless network would work while on-route in areas without a stable internet connection, however.

Pin #	Channel 1 (CH1)	Channel 2 (CH2)
1	NC	5V Supply Output
2	CAN 1 L	CAN 2 L
3	GND	GND
4	LIN Data 1	LIN Data 2
5	NC	NC
6	GND (optional)	GND (optional)
7	CAN 1 H	CAN 2 H
8	NC	NC
9	Supply & LIN1 VBAT	LIN2 VBAT

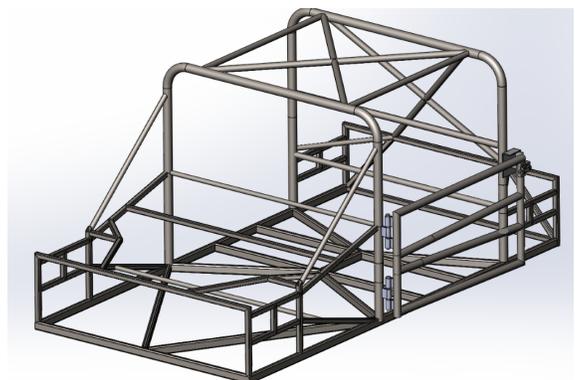
### 0.3.2.1 Pinout

The CANedge uses two D-sub9 connectors for supply, 2 x CAN, 2 x LIN and a 5 V Supply Output.



Make sure to refer to the pinout matching the product hardware revision (see the label).

Pictured: CANEdge Schematic and Pin connections



Pictured: Full door chassis CAD model for one side