

### Traxxas Controller Wirings:

1. VCC and GND from the motors to the Traxxas Link
  - a. ESC goes to the third row
  - b. Servo right goes to 2nd row
  - c. Servo left to the 1st row
  - d. Wire the white wires downward
2. White wires from 3 pin switches go to the motors
3. Switch Configuration:
  - a. Left is ESC
  - b. Center is Left Servo
  - c. Right is Right Servo
4. Connect the blue wires from the 3 pin switches to the Traxxas Link

### Connecting Custom Board to RPi 5:

1. Figure out how to power RPi 5 using GPIO pins
2. Figure out how to connect PCA 9685 to RPi 5 using I2C connection
3. Figure out how to make a common ground between Traxxas Link and RPi 5

### Setting up remote linux machine and the RPi 5:

1. Name the RPi as omega password as omega
2. On remote linux machine setup a static ip to 10.42.0.1
3. On RPi side, make the static ip 10.42.0.100
4. Make sure your forwarding the internet from linux machine to RPi
5. Connect RPi and linux machine using ethernet
6. Try pinging the RPi
7. SSH into the RPi

### Setting up omega truck stack on RPi 5:

1. Connect the spektrum dongle to RPi 5. Figure out how to pair the spektrum dongle to the spektrum controller.
2. Connect the crazyradio to the RPi 5
3. Using jstest, make sure we are getting values from the spektrum controller
4. In the home directory, make a folder called jumpracing
5. Git clone the omega truck stack repo inside jumpracing
6. Add `#include <cstdint>` to PCA9685.h file
7. Add user to I2C group
  - a. `sudo adduser $USER i2c`
  - b. `newgrp i2c`

8. Copy the udev rules from [https://www.bitcraze.io/documentation/repository/crazyflie-lib-python/master/installation/usb\\_permissions/](https://www.bitcraze.io/documentation/repository/crazyflie-lib-python/master/installation/usb_permissions/)
9. Execute the first and third command

```
cd tr_rx_stack
g++ -o main_tr.o main_tr.cpp Crazyradio.cpp -Wall -lusb-1.0 -lSDL2
g++ -o main_rx.o main_rx_control.cpp Crazyradio.cpp PCA9685.cpp vehicle_control.cpp -Wall -lusb-1.0 -lSDL2 -lyaml-cpp
```

- a. Instead of main\_rx\_control.cpp replace it with main\_rx\_control\_ackermann.cpp
6. Start a systemctl service (**please power off ESC**)
7. Run ./main\_rx.o and check if motors are running at ESC neutral point 660 (check direction of wheels too in order to know if we need to increase or decrease the number 660). **Don't forget to change the other values (ie 800 and 520). Also change the servo pin numbers according to my PCA 9685 setup.**
8. Once motors are not running, stop ./main\_rx and restart systemctl service