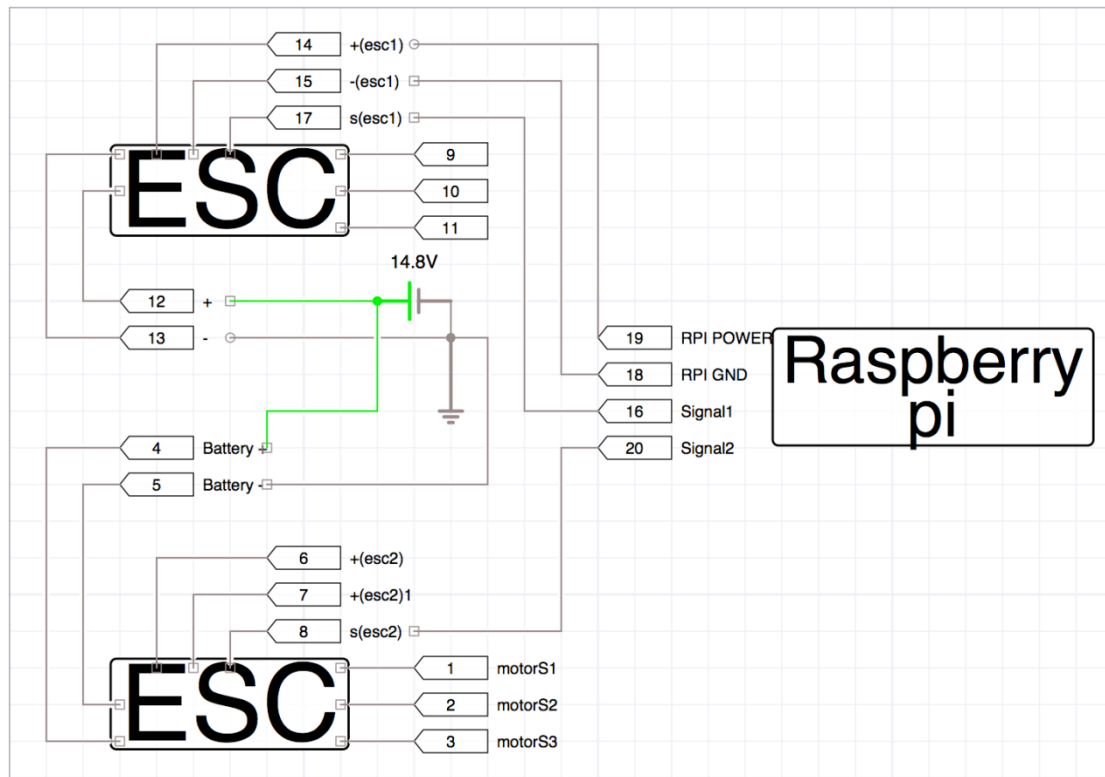


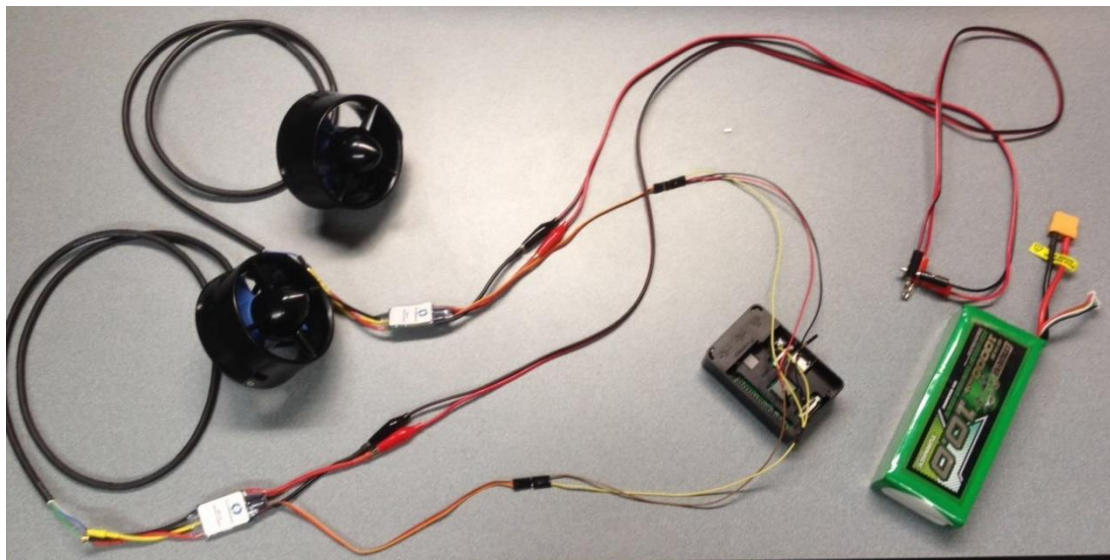
2016.7.9 Control two thrusters via keyboard

Part 1: Hardware Connection

Electrical Diagram



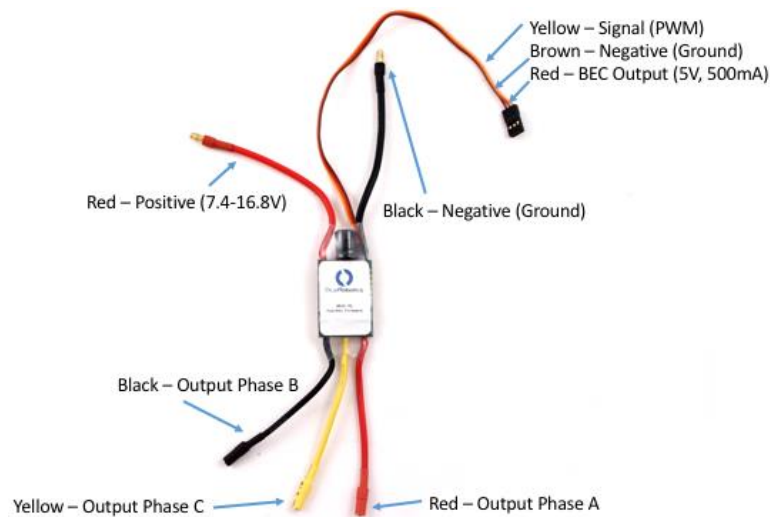
Physical Diagram



- Connection: Thruster → ESC → RPi
- Power supply of RPi is from ESC by connecting BEC output (red line) to GPIO 2 or GPIO 4 on RPi.
- At least one negative (Ground) line must be connected to the corresponding GPIO (ground) on RPi.

- Used GPIO pin #

2	5V
11	GPIO 17
9	GND
23	GPIO 11
25	GND



Pi Model B+		Pi Model B+	
3V3	1	2	5V
GPIO2	3	4	5V
GPIO3	5	6	Ground
GPIO4	7	8	GPIO14
Ground	9	10	GPIO15
GPIO17	11	12	GPIO18
GPIO27	13	14	Ground
GPIO22	15	16	GPIO23
3V3	17	18	GPIO24
GPIO10	19	20	Ground
GPIO9	21	22	GPIO25
GPIO11	23	24	GPIO8
Ground	25	26	GPIO7
ID SD	27	28	ID SC
GPIO5	29	30	Ground
GPIO6	31	32	GPIO12
GPIO13	33	34	Ground
GPIO19	35	36	GPIO16
GPIO28	37	38	GPIO20
Ground	39	40	GPIO21

Part 2: Software

See the c program file “Ctrl_Two_Thrusters_Via_Keyboard.c”

Installation of <ncurses.h> on Ubuntu

```
sudo apt-get install ncurses-dev
```

or

```
sudo aptitude install libncurses5-dev
```

Execute C program via terminal

- If <pigpio.h> is imported

Compile & link

```
gcc -o program_name program_name.c -lpigpio -lrt -pthread
```

Run

```
sudo ./program_name
```

- if <ncurses.h> is imported

Compile & link

`gcc program_name -lncurses`

Note: file name should not have space

FAQ

Error Message

initInitialise: Can't lock /var/run/pigpio.pid
pigpio initialisation failed.

Solution 1

One possible cause of the error: pigpio daemon is already running. Only one instance of the library can be running at any one time.

To get to a known state make sure the daemon isn't running with the command `sudo killall pigpiod`. The lock file should have been deleted. If not manually delete the lock file (`sudo rm /var/run/pigpio.pid`).

Solution 2

Reboot RPi

Reference

For details of pigpio library, see “Let Raspberry Pi Drive Thruster.doc”

For details of ncurses library, see “ncurses.doc”