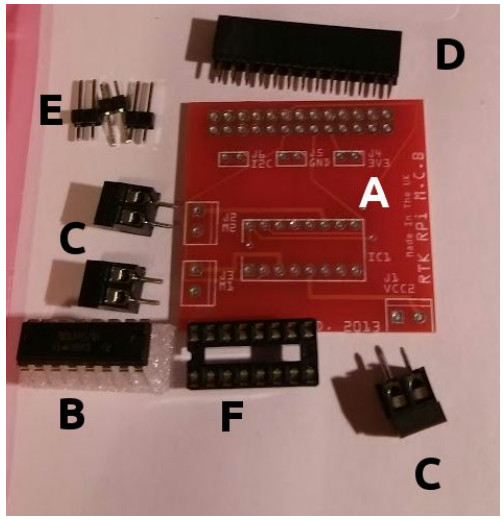
Ryanteck LTD.

Ryanteck Raspberry Pi Motor Controller Board (RTK-000-001) Basic Documentation

Assembly Instructions

Inside your kit:

A. 1 x RTK-000-001 PCB
B. 1 x SN754410NE (H Bridge IC)
C. 3 x Two way terminal screw blocks
D. 1 x 26 way pin header (GPIO Header)
E. 3 x Two way pin Headers
F. 1 x 16 Pin IC Socket



You will need:

- A Soldering Iron
- Solder
- A Raspberry Pi
- 1 or 2 DC Motors.
- Power source for the Motors 4.5-12V Acceptable

Please read through all assembly instructions before you begin soldering.

Assembly:

1. Unpack the RTK-000-001 Kit and ensure all parts of the kit are included.
2. Place the PCB in front of you with RTK RPi M.C.B upwards.
3. Place the IC Socket into the PCB where it is labeled IC1, making sure the notch lines up with the gap in the silkscreen and then solder the socket in place.
4. Solder the three terminal blocks into J1, J2 and J3, ensure the terminal blocks are facing outwards.
5. Solder the Raspberry Pi GPIO Connector into the PCB soldering the pins to the top side of the board.
6. Solder the two pin headers into J4, J5 and J6, the shorter side of the pin should be soldered to the board.
7. Insert the H-Bridge chip into the IC socket making sure the notches line up.

Assembly completed!

Power

The board is designed to accept a different power source from the Raspberry Pi but still requires power from the Raspberry Pi to work. This is from where the IC requires 5V from the Raspberry Pi to power the driver and then allows up to 12V for the motors. The benefit of this is by supplying the Pi with a different power source if the motors take more power than the Pi, it will not go offline or reboot.

On the board's VCC2 terminal block the Left pin is Positive for the motor and the right pin is ground.

For images of the board assembled, visit
http://Ryanteck.ltd.uk/rtk-000-001/

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Board Information

The Ryanteck Raspberry Pi Motor Controller Board (RTK-000-001) is designed to be a budget addition for the Pi to allow quick development of simple robots. It can drive two DC motors at between 4.5-12V.

Motor 1 (M1) Uses the Raspberry Pi Pins 17 and 18,
Motor 2 (M2) Uses the pins 22 and 23.

The two header GPIO Pins are either 0/2 and 1/3 (Dependant on Rev 1 or 2)
All of these are pins that are used under Broadcom Numbering.

Simple sample code to be able to spin M1 backwards and forwards in Python using RPi.GPIO

```
##Simple motor script for the RTK-000-001
import RPi.GPIO as GPIO
import time
#Set to broadcom pin numbers
GPIO.setmode(GPIO.BCM)

#Motor 1 = Pins 17 and 18
#Motor 2 = Pins 22 and 23
GPIO.setup(17, GPIO.OUT)
GPIO.setup(18, GPIO.OUT)

#Now loop forever turning one direction for 5 seconds, then the other
while (True):
        #Sleep 1 second then turn 17 on
        GPIO.output(18, 0)
        time.sleep(1)
        GPIO.output(17, 1);
        time.sleep(5);
        #And now the other way round
        GPIO.output(17, 0)
        time.sleep(1);
        GPIO.output(18, 1);
        time.sleep(5);
        #And loop back around
#And final cleanup
GPIO.cleanup()
```

For more information & PDF Documentation visit
http://Ryanteck.ltd.uk/rtk-000-001/
New documentation in progress.