

# Interfacing a Joystick on The Raspberry Pi 3

## using an MCP3008

### INTRODUCTION:

This instruction manual will guide you on how to interface a Joystick Module on the Raspberry Pi 3 using an MCP3008 ADC. As well as guiding you on setting up an LCD Display.

### OBJECTIVES:

- ❖ To interface a Joystick Module into the Raspberry Pi 3

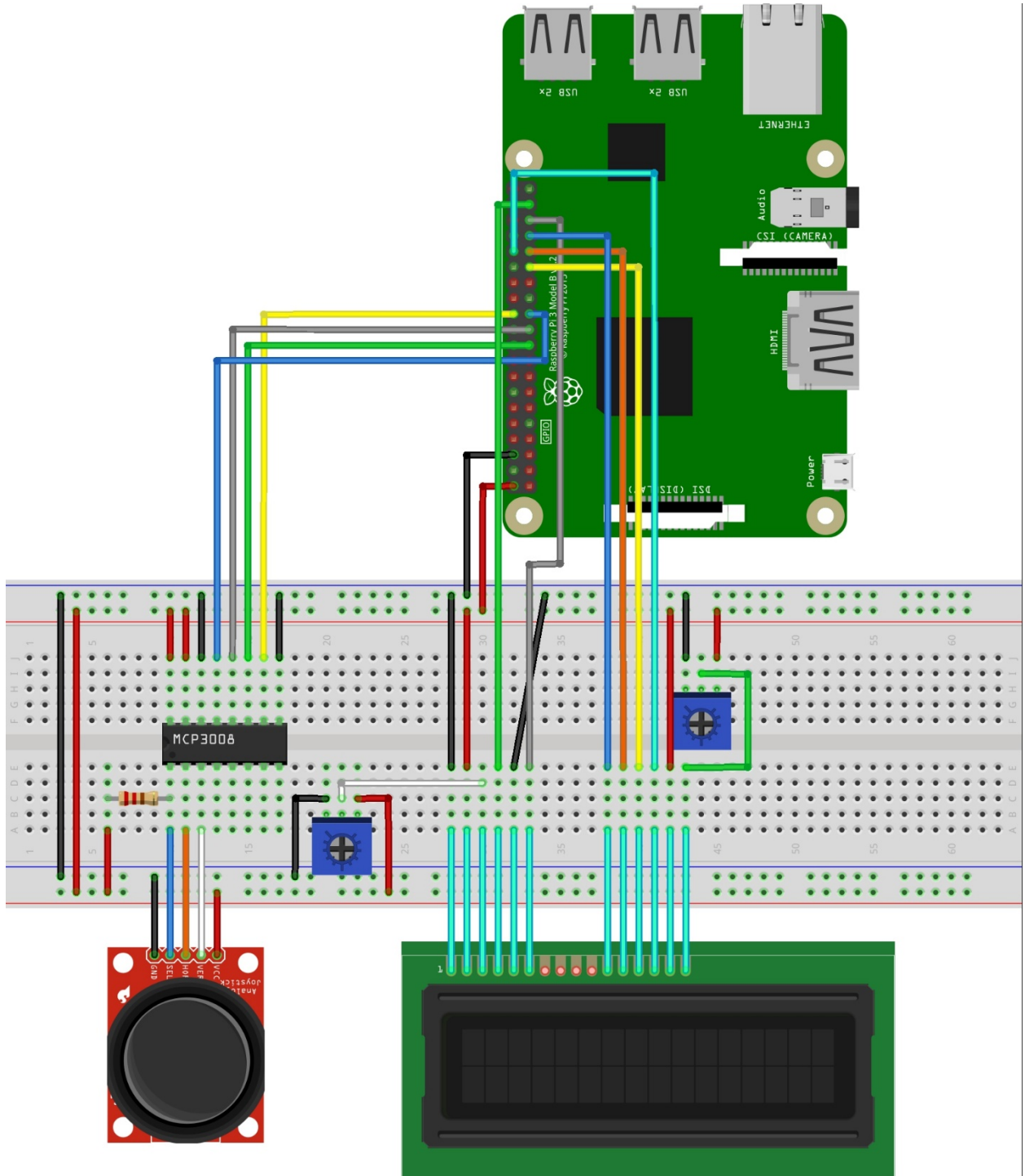
### MATERIALS NEEDED:

- 10k $\Omega$  Trim Pot – 2pcs
- 1k $\Omega$  Resistor 1/4W – 1pc
- Jumper Wires
- MCP3008
- Joystick Module
- Raspberry Pi 3

### PROCEDURES:

- **Check SPI Interface if enabled.**
  - If disabled, refer to <https://goo.gl/eCY4xo> to enable SPI Interface
- **Follow wiring information.**
- **Download Python Source Code:**
  - <https://github.com/impire123/Raspberry-Pi-3-Joystick-with-MCP3008.git>
- **Run code.**

## WIRING DIAGRAM:



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## Wiring Information

### *Joystick MCP3008/Pi*

<i>GND (Ground)</i>	<b>Pi GPIO Pin 6 (Ground)</b>
<i>5V (3.3V)</i>	<b>Pi GPIO Pin 1 (3.3V)</b>
<i>SW (SEL)</i>	<b>MCP3008 Pin 1 (CH0)</b>
<i>VR<sub>x</sub> (HOR)</i>	<b>MCP3008 Pin 2 (CH1)</b>
<i>VR<sub>y</sub> (VER)</i>	<b>MCP3008 Pin 3 (CH2)</b>

### *MCP3008 Pi*

<i>Pin 1 (CH0)</i>	<b>N/C</b>
<i>Pin 2 (CH1)</i>	<b>N/C</b>
<i>Pin 3 (CH2)</i>	<b>N/C</b>
<i>Pin 9 (DGND)</i>	<b>Pin 6 (GND)</b>
<i>Pin 10 (CS)</i>	<b>Pin 24 (GPIO8)</b>
<i>Pin 11 (DIN)</i>	<b>Pin 19 (GPIO10)</b>
<i>Pin 12 (DOUT)</i>	<b>Pin 21 (GPIO9)</b>
<i>Pin 13 (CLK)</i>	<b>Pin 23 (GPIO11)</b>
<i>Pin 14 (AGND)</i>	<b>Pin 6 (GND)</b>
<i>Pin 15 (VREF)</i>	<b>Pin 1 (3.3V)</b>
<i>Pin 16 (VDD)</i>	<b>Pin 1 (3.3V)</b>

### *LCD 16x2 Pi*

<i>Pin 1 (GND)</i>	<b>Pin 6 (GND)</b>
<i>Pin 2 (VCC/5v)</i>	<b>Pin 2 (5V)</b>
<i>Pin 3 (V0)</i>	<b>Pot Pin 2</b>
<i>Pin 4 (RS)</i>	<b>Pin 37 (GPIO26)</b>
<i>Pin 5 (RW)</i>	<b>Pin 6 (GND)</b>
<i>Pin 6 (EN)</i>	<b>Pin 35 (GPIO19)</b>
<i>Pin 11 (D4)</i>	<b>Pin 33 (GPIO13)</b>
<i>Pin 12 (D5)</i>	<b>Pin 31 (GPIO6)</b>
<i>Pin 13 (D6)</i>	<b>Pin 29 (GPIO5)</b>
<i>Pin 14 (D7)</i>	<b>Pin 32 (GPIO12)</b>
<i>Pin 15 (LED+)</i>	<b>Pin 6 (GND)</b>
<i>Pin 16 (LED-)</i>	<b>Pin 2 (5V)</b>