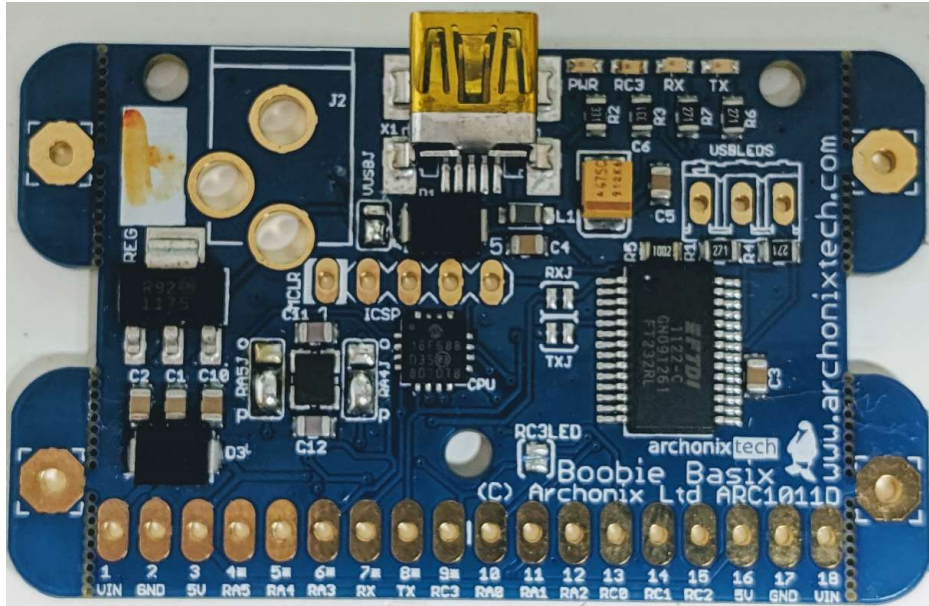




# THE BACKOFFICE Ultimate Joystick Interface v2.0



[www.backofficeshow.com](http://www.backofficeshow.com)  
[www.youtube.com/backofficeshow](http://www.youtube.com/backofficeshow)

Pin assignments:

- 1 VIN – Unregulated voltage input
- 2 GND - Ground
- 3 5V – Regulated voltage output (use this!)
- 4 Channel 1 - Digital Button Input
- 5 Channel 2 – Analogue Input (VDa)
- 6 Channel 3 – Digital Button Input
- 7 Serial RX – Embedded Serial Stream
- 8 Serial TX – Embedded Serial Stream
- 9 Channel 4 – Analogue Input (VDa)
- 10 Channel 5 – Analogue Input (VDb)
- 11 Channel 6 – Analogue Input (VDb)
- 12 Channel 7 – Analogue Input (VDC)
- 13 Channel 8 – Analogue Input (VDC)
- 14 Channel 9 – Analogue Input (VDd)
- 15 Channel 10 – Analogue Input (VDd)
- 16 5V – Regulated voltage output (use this!)
- 17 GND - Ground
- 18 VIN – Unregulated voltage input



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## Input Port Descriptions - Digital

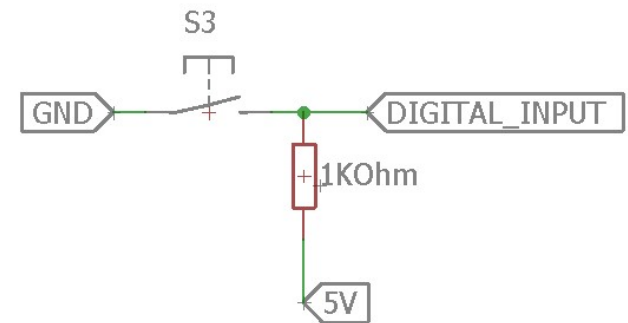
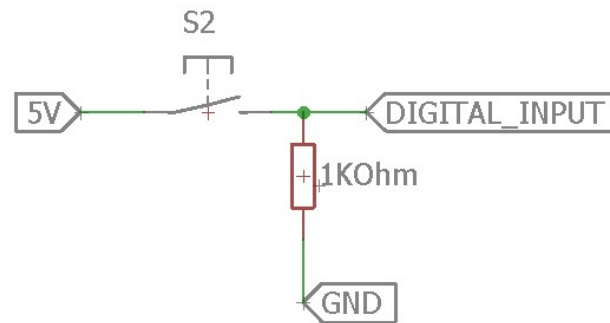
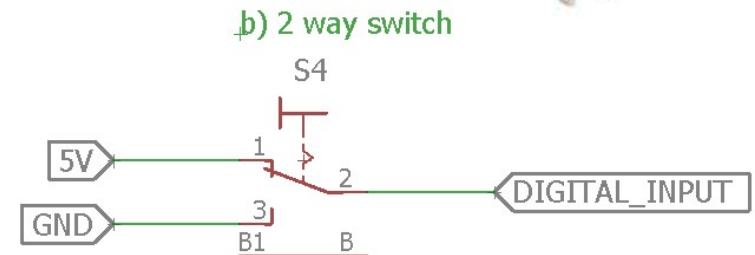
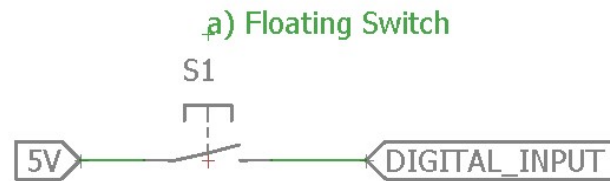


### Digital Button Input

- Suitable for buttons and switches
- Anything with an on or off state
- Reports a value of 0 at zero volts
- Reports a value of 255 above 3 volts

Try to avoid leaving the input floating as in image **a**, where you can consider a pull-down circuit (c) or pull-up circuit (d)

2 way switches provide a very accurate input and do not require a resistor.



NEVER CONNECT THE VIN TO YOUR INPUTS! ALWAYS USE THE 5V OUTPUT PINS



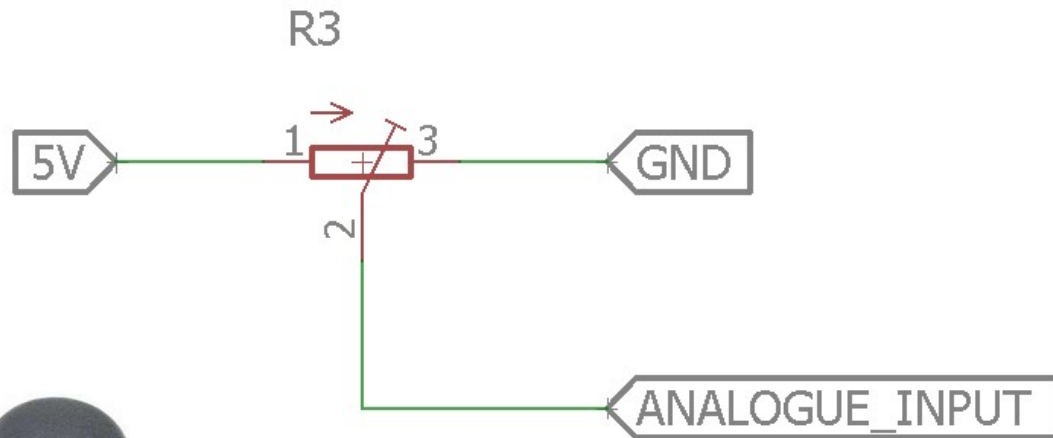
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## Input Port Descriptions - Analogue



### Analogue Inputs

- Can be used as a digital input (see previous section)
- Suitable for variable resistors
- Suitable for rotary pots
- Suitable for potentiometer joysticks
- Provides values from 0 to 16368 for the 0v to 5v range



NEVER CONNECT THE VIN TO YOUR INPUTS! ALWAYS USE THE 5V OUTPUT PINS

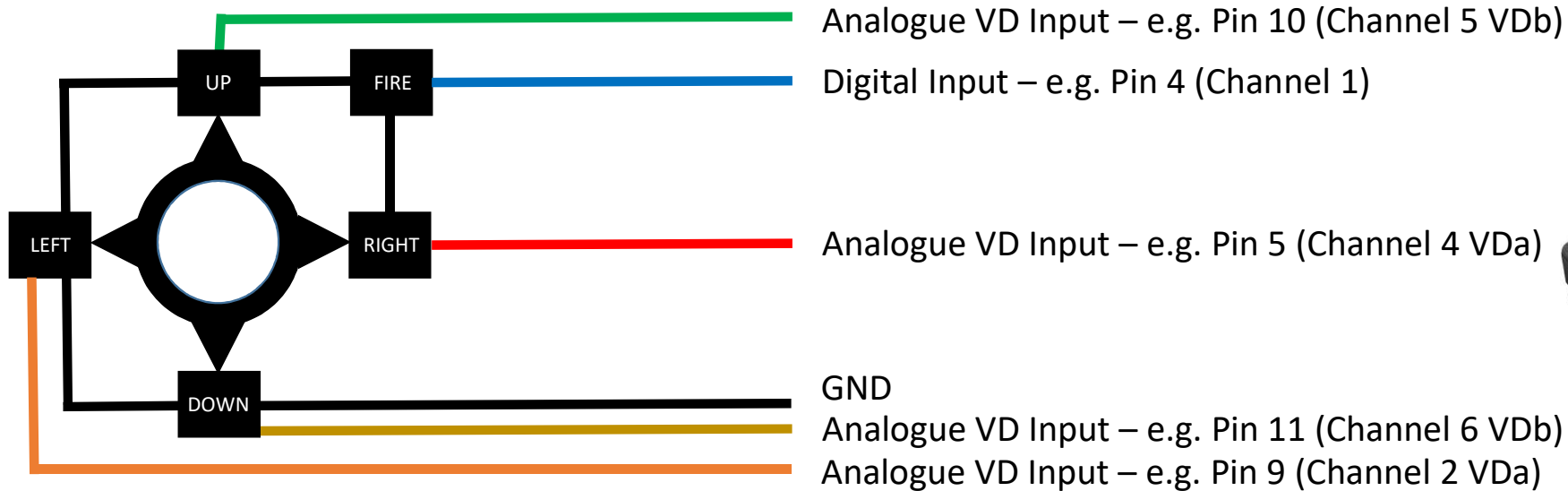


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## Input Port Descriptions – Virtual Digital VDs

### Virtual Digital VDs

The analogue input channels are paired such that 4 differential digital joystick channels can be accommodated  
**This is for the use case where you wish to interface to an older digital joystick with a common ground on the buttons**



**NEVER CONNECT THE VIN TO YOUR INPUTS! ALWAYS USE THE 5V OUTPUT PINS**



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## Input Port Descriptions – Virtual Digital VDs

The Virtual Digital (VD) Channels resolve to a single analogue output. The behaviour is as follows:



| Input A         | High | Low  | Low    | High   |
|-----------------|------|------|--------|--------|
| Input B         | Low  | High | Low    | High   |
| Analogue Output | Low  | High | Medium | Medium |

NEVER CONNECT THE VIN TO YOUR INPUTS! ALWAYS USE THE 5V OUTPUT PINS



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## Input Port Descriptions - vJoy

vJoy is a device driver that allows you to connect hardware to your PC and route its output to the Joystick system in Windows. Think of it as a “Virtual Joystick”

Simply go to the vJoy site and after downloading, install it:

<http://vjoystick.sourceforge.net>



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## Input Port Descriptions - vJoySerialFeeder

vJoySerialFeeder is an application that takes a serial data stream and turns it into inputs usable by vJoy. It is a very powerful program as it allows you to configure your virtual control in any way you wish, even allowing you to script actions.

This powerful tool is what allows the “Ultimate Joystick Interface” to be so versatile and configurable.

You can download it from here:

<https://github.com/Cleric-K/vJoySerialFeeder/releases>

The screenshot shows the vJoySerialFeeder application interface. At the top, there is a profile dropdown set to 'Test Profile', a virtual joystick dropdown set to 'vJoy.1', and a port dropdown set to 'COM6'. Below these are buttons for 'New', 'Load', 'Save', 'Delete', 'Protocol' (set to 'IBUS'), 'Setup', 'Port Setup', and 'Refresh'. The main area contains a table of 11 channels, each with a 'Channel' dropdown, an 'Add Axis' button, an 'Add Button' button, an 'Add Bit-mapped Button' button, and an 'Add Script' button. The table columns are Channel, Axis, Input, and Output. The Output column shows a green progress bar and a percentage value. Each row has 'Setup' and 'Remove' buttons.

| Channel | Axis      | Input | Output |
|---------|-----------|-------|--------|
| 1)      | Button: 1 | 255   | 0%     |
| 2)      | Y         | 0     | 0%     |
| 3)      | Button: 2 | 0     | 0%     |
| 4)      | X         | 0     | 0%     |
| 5)      | Z         | 0     | 0%     |
| 6)      | Rx        | 0     | 0%     |
| 7)      | Ry        | 6816  | 38%    |
| 8)      | Rz        | 7088  | 43%    |
| 9)      | SI0       | 7936  | 44%    |
| 10)     | SI1       | 8144  | 47%    |
| 11)     | X         | 8184  | 50%    |