

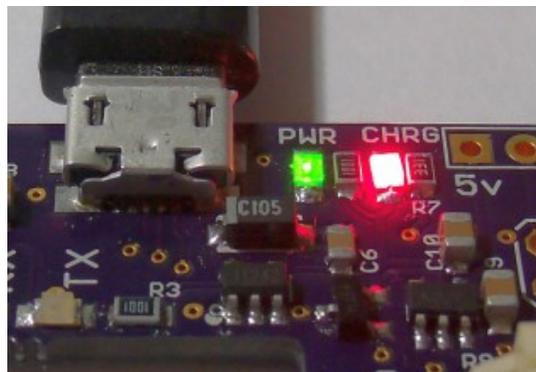
## What is the Breadboard Buddy Pro

The BBBPro is a 4 in 1 breadboard tool. The amount of time you save using this is crazy! I've been using my original Breadboard Buddy for years and the main addition is the newer CP2104 and Lipo Charging.

The board can be broken down into four main parts.

1. USB Power
2. USB 2 UART
3. LIPO Charger
4. Reset Button

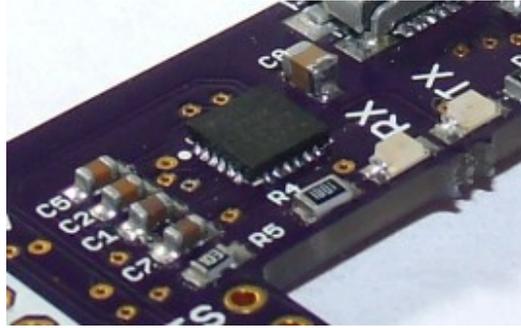
## USB Power



Using a MicroUSB cable you can supply the board with its power. The board can output 5v and 3.3v simultaneously. Using the Jumpers on each of the top corners you can select which supply goes to which rail on breadboard.

If using a battery please note that there will obviously be no 5v supply. You can take 4.2 (or what ever the voltage on battery may be) from the BATT pin. Otherwise it will supply power to the 3.3v regulator and you can still use that on the power rails.

## USB 2 UART



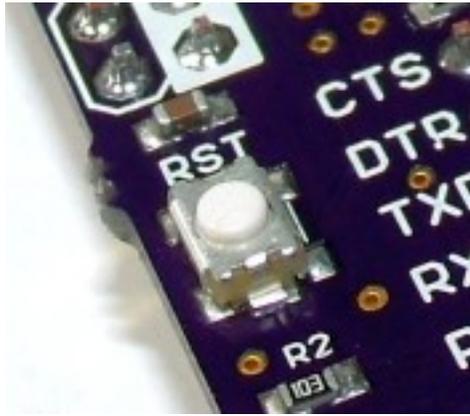
The USB to UART uses the CP2104, its a beautiful less expensive part than the FT232RL. It has a RX and TX led for indication of data transmission and reception. Supports 5/6/7/8 Data bits, Stop Bits 1/1.5/2, Parity odd/even/mark/space/none, Baud Rates 300bps to 2Mbits. Has a 576 transmit and receive buffer.

## Lipo Charger



Uses the widely known and trusted MCP73831 for lipo charging. These ICs are so popular and tested so much that it almost guarantees your battery will be charged safely. The same charging circuit is used by other suppliers of similar circuits. What makes mines special is the ability to still supply power to circuit while charging, without crossing the voltage. Has a option for 100mA or 500mA charging on bottom. (Solder Jumper)

## Reset Button



Just about any breadboard user knows how important a reset button can be. Using DIP MCUs are awesome for prototyping but all these extra components can take up so much space. This button isn't taking any space away. Also it's pulled up to 3.3v or 5v so your MCU is safe. (please ensure you select correct voltage on solder jumper on bottom) Can be used as a General Purpose pulled up button as well.

## Options

I've decided to sell this board with its components as options. Mainly because some people don't use LIPO and some may not need a Button. So now you can basically have this built to your needs

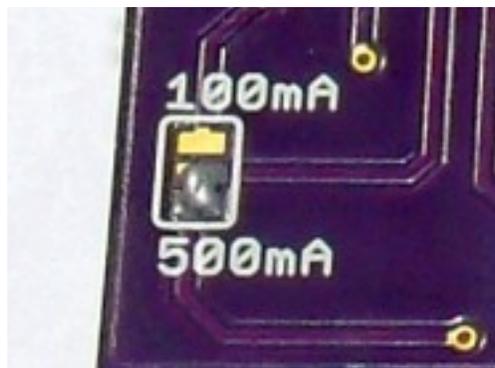
## Usage & Setup

There are only a few things you probably will change during the use of the BBBPro.

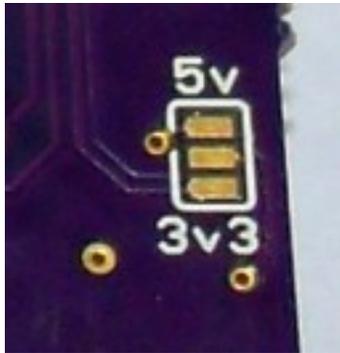
- 1) The Charging Current
- 2) The Reset Pull-Up Voltage
- 3) Power Rail Supply Selection

## Setting the Charging Current

To set the charge current, flip the PCB on bottom and either solder center pad to 500mA or 100mA pad. Below you can see it's set to 500mA.



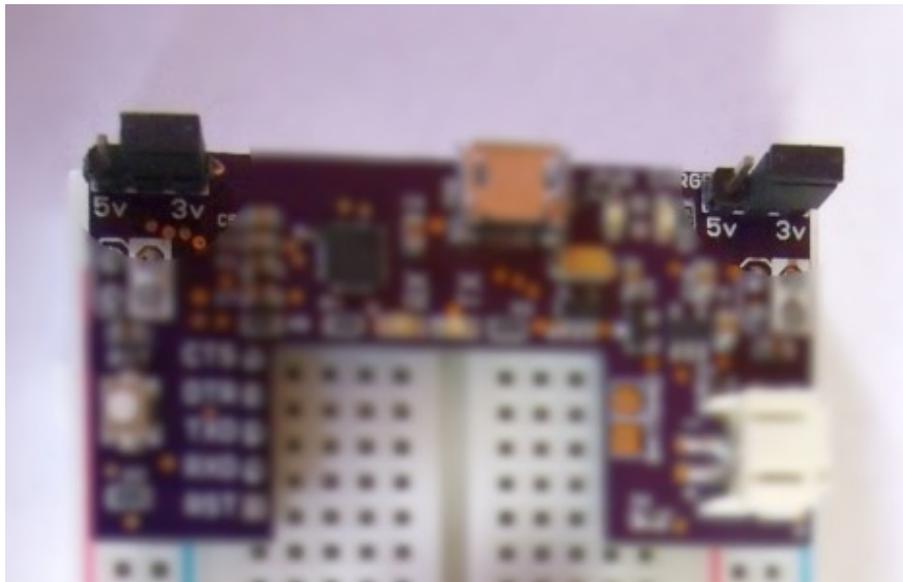
## Setting the Reset Button pull-up voltage



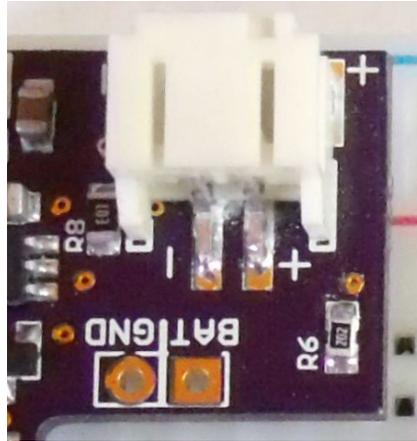
Using the same idea as above simply solder the center pad to 5v or 3.3v depending on the HIGH voltage needed on the button.

## Selecting the Rail Voltage

Using the TOP LEFT and TOP RIGHT jumpers you can select the voltage for each rail.



## Using the Lipo



To use a lipo battery simply plug it in the connector and it will power the 3.3v regulator and give out 3.3v. Obviously it can not give you 5v (without a boost DC-DC). But if you should need more than 3.3v, you can simply take the power from the battery pins on the breadboard.

## USB to UART



To use the USB to UART just connect to the pins on the breadboard and you are set. DTR has a 100nf ceramic cap in series for all those who want to program an Arduino.

# Breadboard Buddy Pro R1

