

## **Bartybee has a go at : Building an Arduino 'Pro Micro' MPU-9150 Head Tracker**

I have basically collated instructions, helpful notes and advice given in the EDtracker.com website and brumster100's You Tube links, (brumster100, is a star and font of all knowledge).

The notes have been collated with a view to building a more compact version on a cut down section of the prototype board supplied, rather than a using a tried and tested specifically produced PCB, (which would have saved time, effort and tricky wiring).

This version worked first time and I have had no issues with it to date.

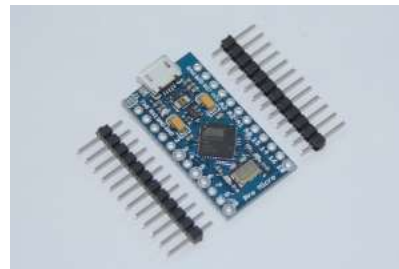
### **Components**

With the exception of wiring and case, I purchased all parts online from Hobby components as the 'Headtracker Kit with upgraded module', (just under 20 quid for the lot including VAT and delivery).

Maybe I could have sourced the components cheaper elsewhere separately, but in my honest opinion, these were reasonably priced for a complete kit bundle.

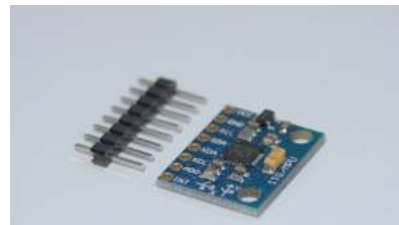
**Arduino 'Pro Micro' board,**  
plus 2 off 12 pins strips.

*Note: The 'Pro micro' is the one with 12 connection holes per edge not 8.*



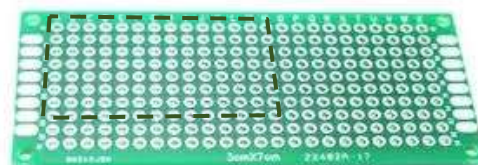
**MPU-9150 board,**  
plus 1 off 8 pin strip.

*Note: The GY 521 MPU-6050 is a lot cheaper, but does not have the built in magnetometer.*



**Prototype board 3 x 7cm**

*Note: I cut the 24 x 10 array to 7 x 13 holes using a junior hacksaw.*



**Miniature push switch**



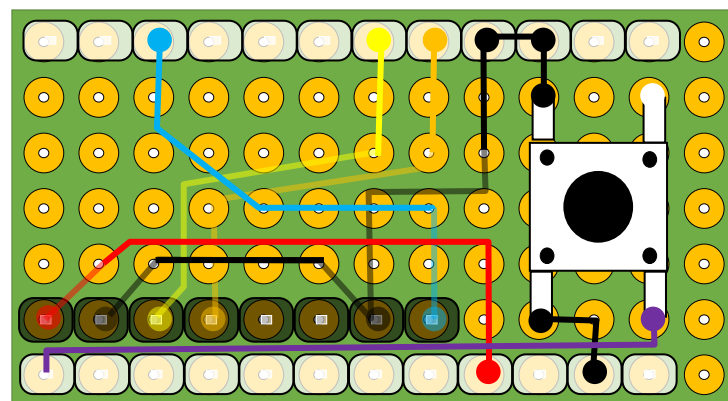
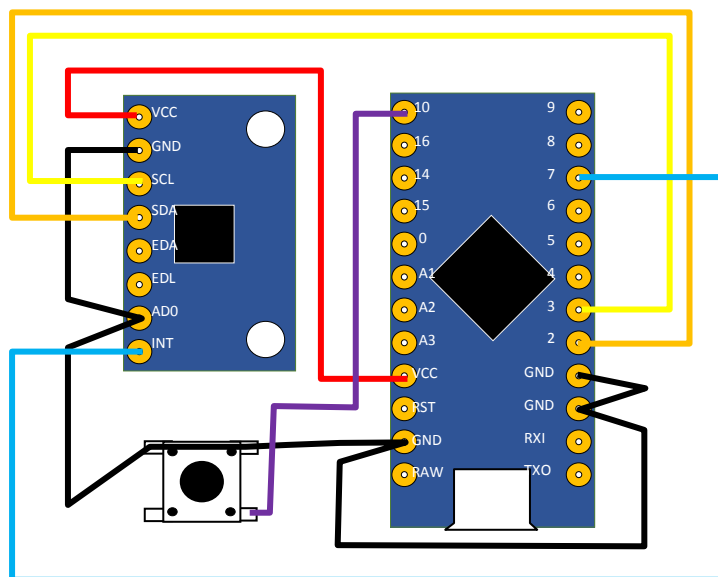
**Wiring (not supplied in the kit)**

I used one half from some spare twin of dolls house lighting wire I had lying about, (this can actually fit through a prototype board holes).



### Circuit Connections

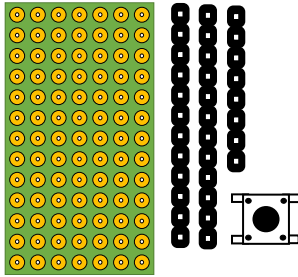
Arduino	MPU 9150 (or 6050)	Switch
VCC	VCC	
Pin 2	SDA	
Pin 3	SCL	
Pin 7	INT	
Pin 10		One side
Common connections		
GND	AD0	
GND	GND	
GND		side



Wiring layout diagram ( some wires pass through board)

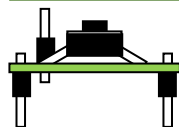
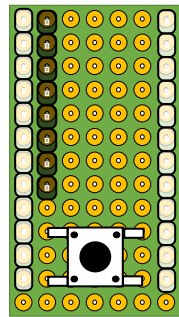
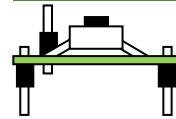
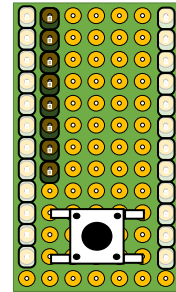
Solid wire colours denote this side of the board, translucent colours, depict the underside.

## Circuit Assembly



### Step 1

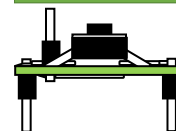
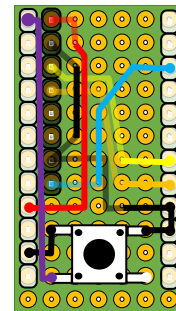
Solder the pin strips and switch to the prototype board.



### Step 2

Solder the wires as per the layout diagram passing them through the board as necessary.

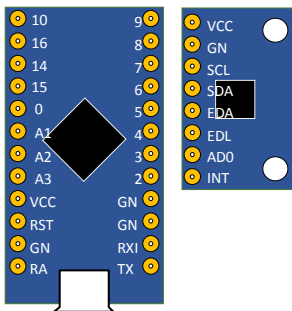
*Note: All my wiring has white sleeving rather than coloured as shown.*



### Step 3

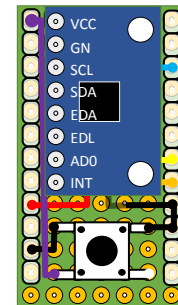
Trim off any surplus from the soldered pins/wiring so that they will not foul the circuit boards when fitted.

*Note: Now is a good time to check the wiring circuit connections as after the next bit it will be 'tricky'.*



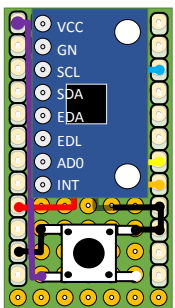
### Step 4

Check the Arduino board for fit and clearance from the already soldered and trimmed parts, then carefully solder it into position and trim off any excess pin material.



### Step 5

Carefully solder MPU 9150 (or 6050) into position and trim off any excess pin material.



### Step 6

The circuit assembly stage is now complete and the device is ready to test with software prior to finally putting it in a case.



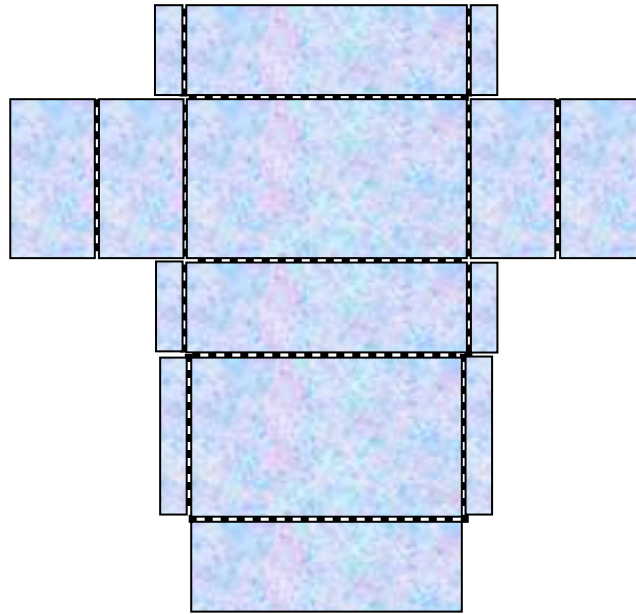
## Case assembly

Make the case a suitable size to fit the device with the lid lid fitted.

*Note : I tried printing out and folding a paper template first, to get a good fit.*

Cut from plastic packaging or modelling card then fold to shape and superglue. When set, cut a hole for USB port access.

I cut my shape from some clear plastic packaging because I like the overall appearance, (it looks a bit like a mini 'ORAC' for anyone old enough to remember Blake 7).



Here's some photos of my final effort.



Cheers

Bartybee