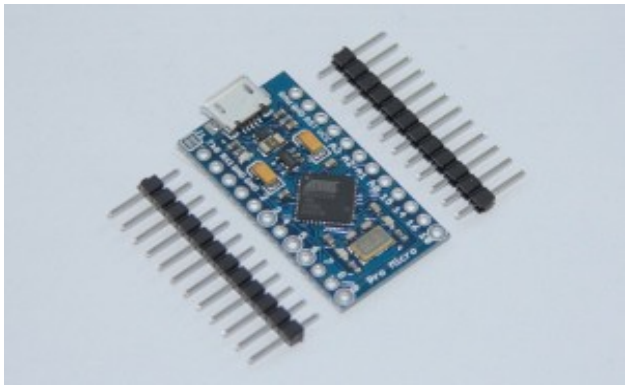
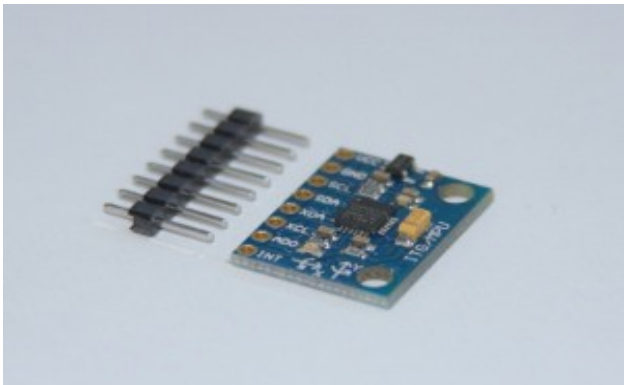
ED Tracker Maplin project box build.

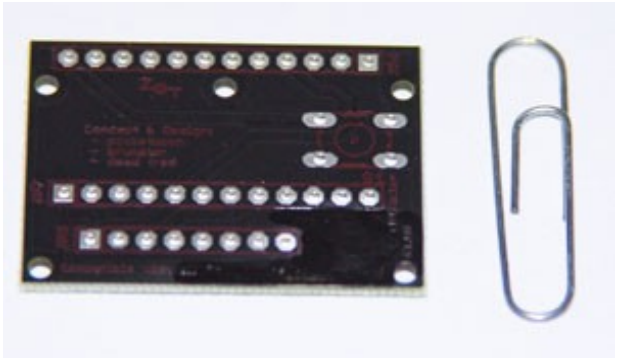
I've put together this guide to help anyone wanting to case an ED Tracker in a maplin project box. I've built a few ED Tracker's into boxes like this for friends etc. But this has changed from what I've posted on the Frontier Elite Dangerous forum in the past. For more information on any points in this guide or updates contact me 'Omegahunter' on the forums. http://forums.frontier.co.uk/index.php

OK starting with what you will need:

The Arduino board, MPU and switch (the Hobbycomponents kit is a good way to get the parts). Then a PCB's from (Pocketmoon, Brumster or Dead Fred) See EDTracker.org.uk







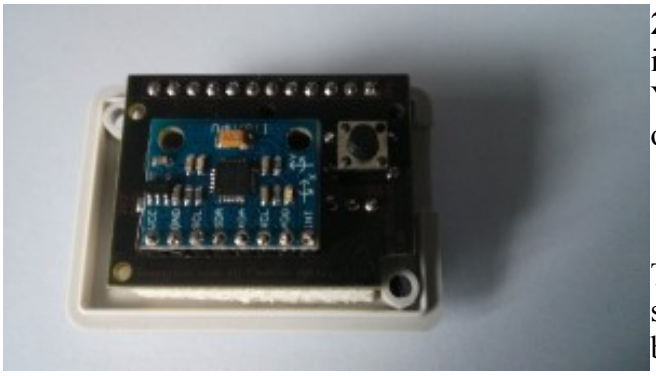
I'm guessing you have all of the components already.

1: Not counting tools to build the board you only need a good craft knife, a side cutter, and some drill bits 8mm is the biggest you will need but larger ones a will come in handy if you have them. Locking pliers (used a hand vice to hold the drills bits so I didn't need a drill). A pencil and a marker so you can see where you want to cut/ drill the box.

Other optional tools are a junior hacksaw, flat and round files, counter sync bits, a drill.

Other bits double sided sticky foam pads or a roll, you will need a block about 30mm long, 8mm wide and 10mm tall. This is used to hold the unit in place in the box and stop it from rattling (but a tighter cut on the PCB would work just as well). Sticky Velcro strips are useful to place the finished unit on to your headphones, and small cable ties.

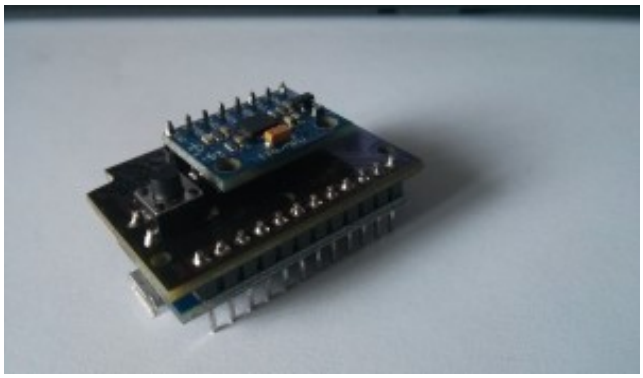
Of course you will need the project box I've use the maplin boxes part numbers "N78BQ black" and "SC78 grey" The boxes are made from ABS it is a strong plastic but easy to work on.



2: If you haven't already build your Tracker then it helpful to cut the custom PCB before you do. You only need to remove a 4mm by 4mm square on the corner under the switch.

This is so the unit will fit in the box between the screw pillars, you can test this for fix before the build or when whole unit is made.

IMPORTANT when building the ED Tracker boards I solder the short length pins to the custom PCB for the Arduino board and kept the longer pins to solder the Arduino to but didn't cut them when done. This is so they can be used to stand the units up in the box. See EDTracker.org.uk for a full guide on how to assemble the boards.



The pins that are used to solder the MPU board should be cut as close as possible (cutting them flush isn't needed). If you have already build the board and cut the pins then it just means having to use more foam to mount it in to the case.

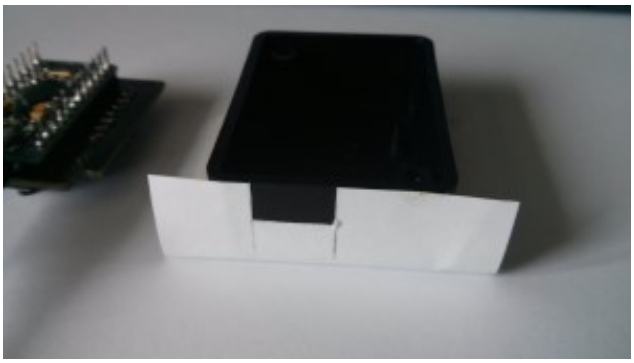
The ED Tracker fits in the box with the lid as the base and the box part being on top.

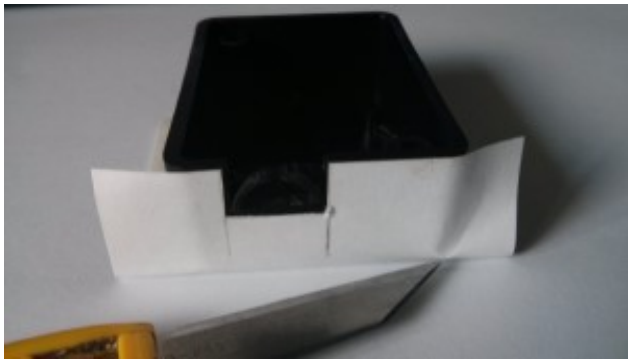
3: With box part sitting flat open side up and the ED Tracker built. Plug in the micro USB and place it in the box with the switch facing into the box. The cut out on the PCB

will go around the screw pillar (front right in picture above) and the other flat side will touch the back pillar (back left in picture above). Of course it won't fit in because of the USB cable but you can use this to mark out the size of the slot needed to be cut out to make it fit. As you can see I made it easier to see what to remove by using a sticky label.


Once this it marked out you can cut it using the side cutters (snip inside the marks as you will stress the plastic) then use a craft knife to finish.

REMEMBER YOUR FINGERS



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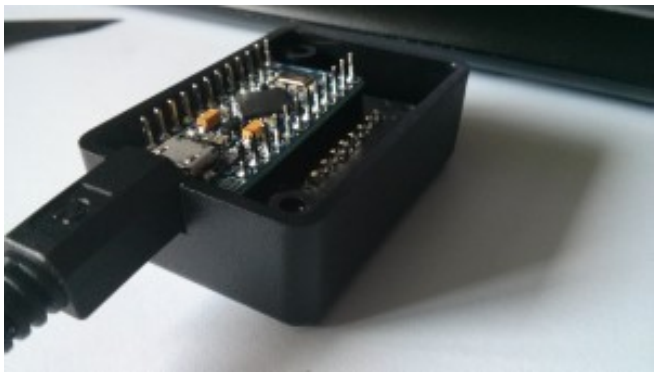
Once you have made this cut you will able to fit the ED Tracker into the box while the cable is attached. You will want to make the slot a bit larger than the USB plug to allow for movement of the unit when finally sticking it in place and removal of the cable.



Also remember if you are making one for someone else they might have a different (larger USB cable) that could need more room.

4: Using a small square of sticky label in the base of the box and a large marker pen is the easiest way to mark the position of the switch hole. Cover the switch with the marker ink and place the ED Tracker in the box before the ink dries out. Start with a 4mm hole so you can see how close you are and move it a bit as you increase its size to the final 8mm.

You can counter sync this with a larger drill bit, the hole can be a bit out of line without an issue. Had a grinding wheel in my tool box but you could use a round file or trim the hole with the craft knife to form the taper or failing that just make the hole bigger.

5: With the box now done you can turn to the lid (which is to be the base it all stands on). Removing the ED Tracker from the Box and place it on the lid. You will now be able to mark where the lids rim overlaps the cut-out you made for USB cable. The lids rim will need to be cut out so the section is at least flat with the lids base. More might need to be removed to fit your USB plug.

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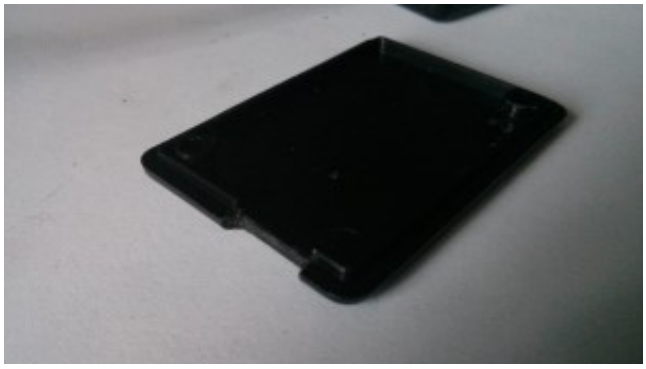
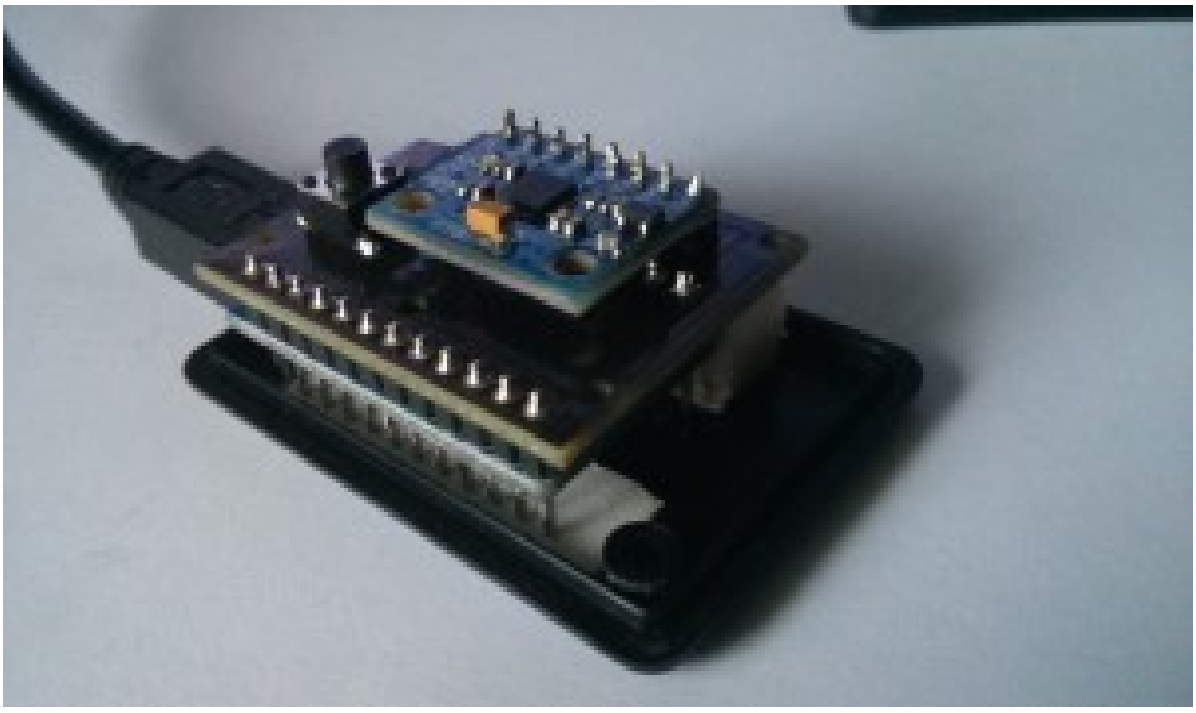


With all this done the ED Tracker will stand on the lid (this is the base) on its pins and the box will fit over the top of it all.

6: You can now use the sticky foam to make a block for the custom PCB to the lid, along the side of the Arduino board and then a bit of sticky foam to opposite Arduino pins to stop them from rattling.

30mm long, 8mm wide and 10mm tall.

The block is stuck the the PCB and a strip to the lid on the where the pins will touch.
Place the ED Tracker in to the box and the lid on top of it to get everything to line up right.



This just leaves you to screw the case together and cut the some cut some Velcro strip to attach it to your headphones.