Flick Quick Start and FAQ

Getting started

The Flick boards are an add on boards for the Raspberry Pi which bring 3D tracking and gesture board that lets you control your I2C enabled devices as if by magic!

Flick uses technology that enables the PCB to detect your gestures from up to 15cm away in 3D space.

This guide will show you how to assemble the Flick boards, set them up in their cases and discuss some of the most common issues and questions.

Follow the link to the relevant board to get started:

- Flick HAT
- Flick Zero
- Flick Large

Or skip to the FAQ section if you are having troubles.

Flick HAT Board

Kit contents

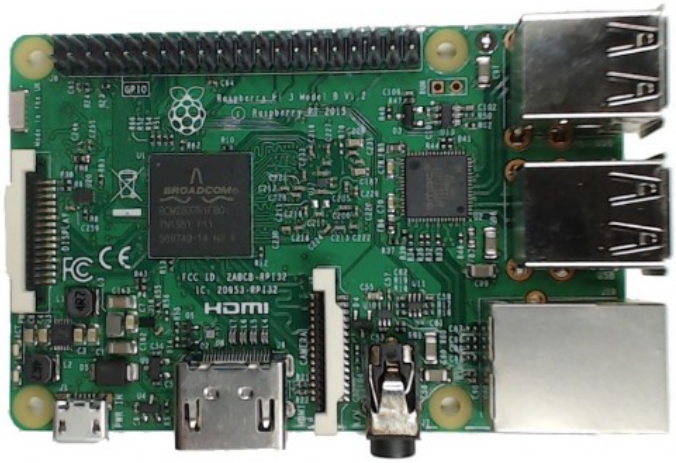
Inside the box you should have received the following items:

- 1 Flick HAT
- 8 Plastic bolts
- 4 Plastic spacers

- 3 Stickers
- 2 Info card

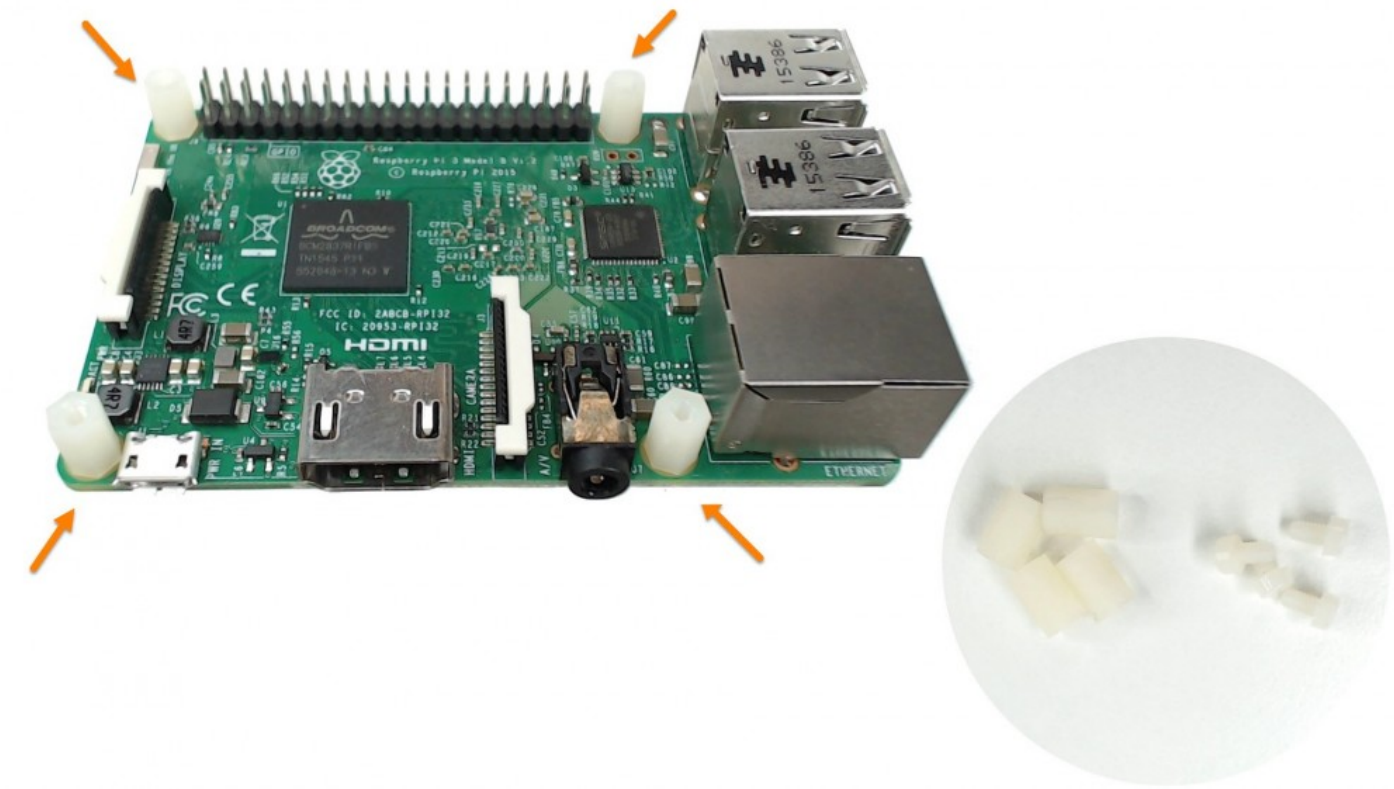
Board Assembly

Step 1 - Unpack your Raspberry Pi.



Step 2 - Install the spacers on the Raspberry Pi as shown here holding them with 4 plastic bolts from underneath the Pi.

The bolts should be screwed in with a PH0 screwdriver.



Step 3 - Get the Flick HAT from its anti-static bag.

Step 4 - Place the Flick HAT on top of the Raspberry Pi by gently pushing the female header onto the Raspberry Pi male header.

If you have acquired the Flick HAT case please skip to the next Section – Flick HAT Case assembly.

Step 5 - Screw the last 4 plastic bolts to hold the Flick HAT in place.

At this point the Flick Zero is ready to be used.

Flick HAT Case Assembly

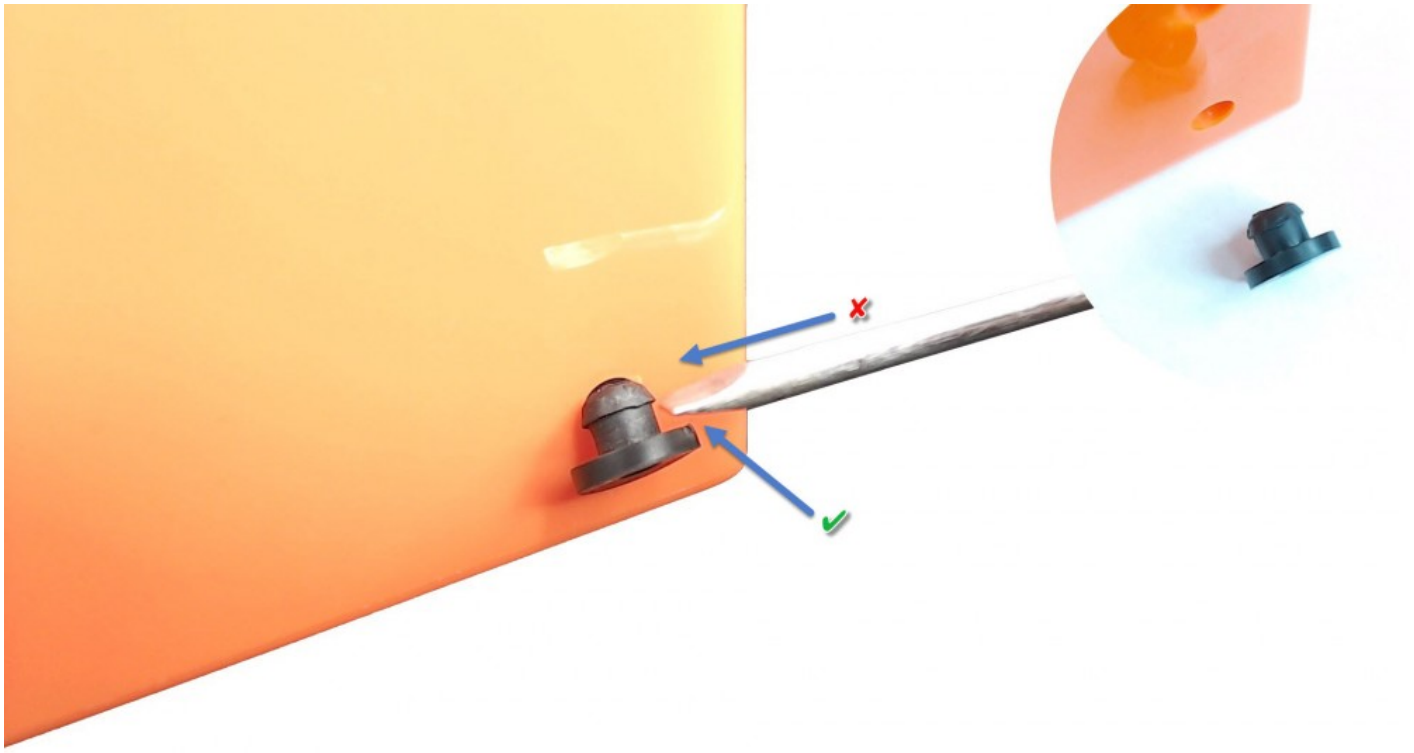
The Flick HAT Case is the prefect enclosure for the Flick HAT.

Step 1 – After removing the protective plastics pull gently out the two sides of the bottom part of the case to unhook the top.

This should allow you to detach the top cover and easily take a part the case.

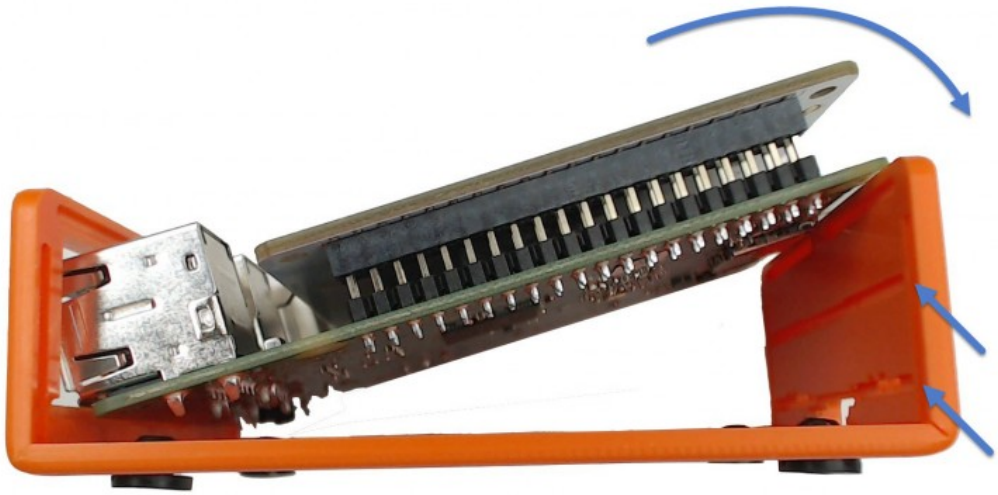
Within the case you will find 4 rubber feet and 4 suction cups. Here is how it will look like once opened.

Step 2 – To install the rubber feet on the bottom part of the case you will either have to push and twist them through one of the 4 the holes or help yourself with a small screwdriver to tuck in the top part of the feet within the hole as shown on the left. Be careful not to cut through the feet and rather than using the tip of the screwdriver use the flat surface to push the head of rubber foot in.



Step 3 – Insert the Raspberry Pi and the Flick board in the bottom part of the case by first placing the USB connectors in.

The PCBs of the two boards should be aligned within the grooves of the panel as shown in the picture.

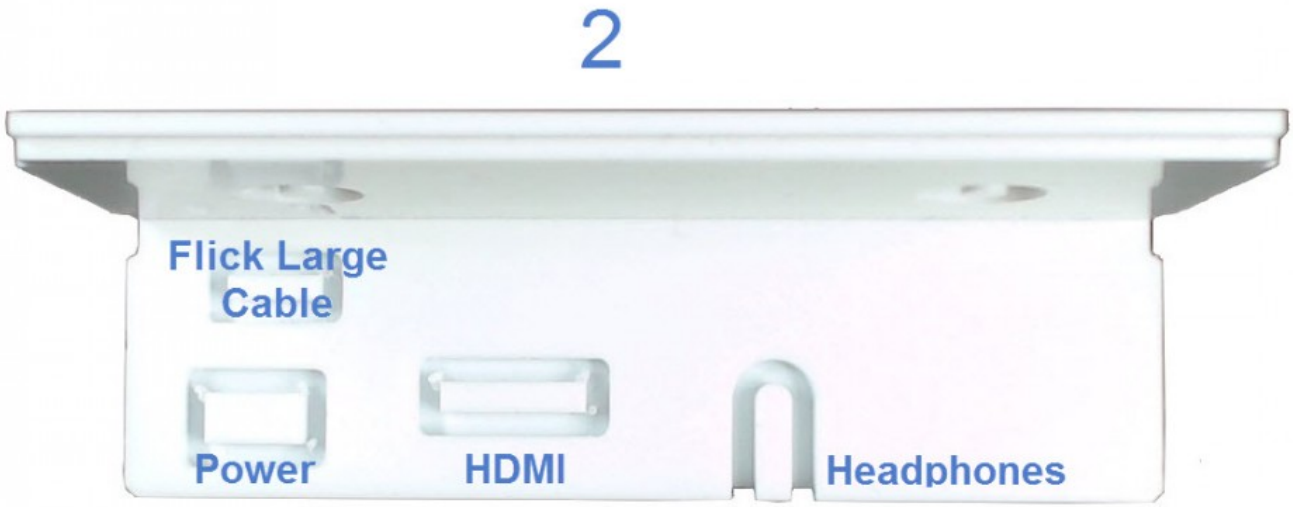


Once the two are fully rotated into position the Raspberry Pi and the Flick board should sit nicely in the bottom part of the case.

Before moving to the next step please take a moment to understand which knock outs need to be removed from which of the two panels.

If you intend to close the case you need to remove the knock outs from panel 1 otherwise if you want to keep the case open remove the knock outs from panel 2.

Only remove the ones labelled Headphones, HDMI and Power.



If you are not planning on using the suction cups and wish to close up the case then follow the step below otherwise skip to the Section – Flick HAT Case Assembly With Suction Cups.

Step 4 – Push out gently the sides of the bottom part of the case to allow for the white panels to slot back in.

At this point the Flick HAT is ready to be used.

Flick HAT Case Assembly With Suction Cups

Step 5 - Install the suction cups on the two white panels.

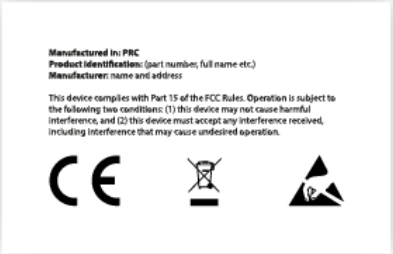
If you are not sure about how to remove the knock outs for the suction cups please refer to the FAQ below which explains how to it.

Step 6 - Push out gently the sides of the bottom part of the case to allow for the white panels to slot back in.

At this point the Flick HAT is ready to be used.

[Flick Zero Board]

Kit contents



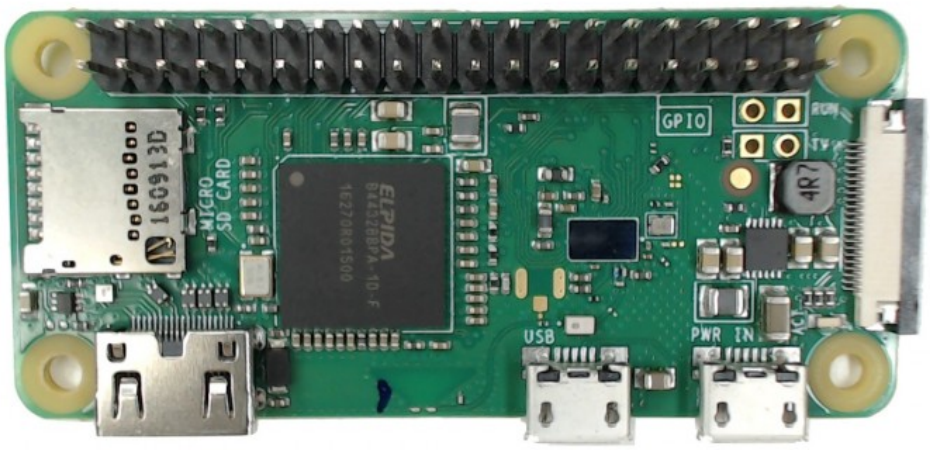
Inside the box you should have received the following items:

- 1 Flick Zero
- 8 Plastic bolts
- 4 Plastic spacers

- 3 Stickers
- 2 Info card

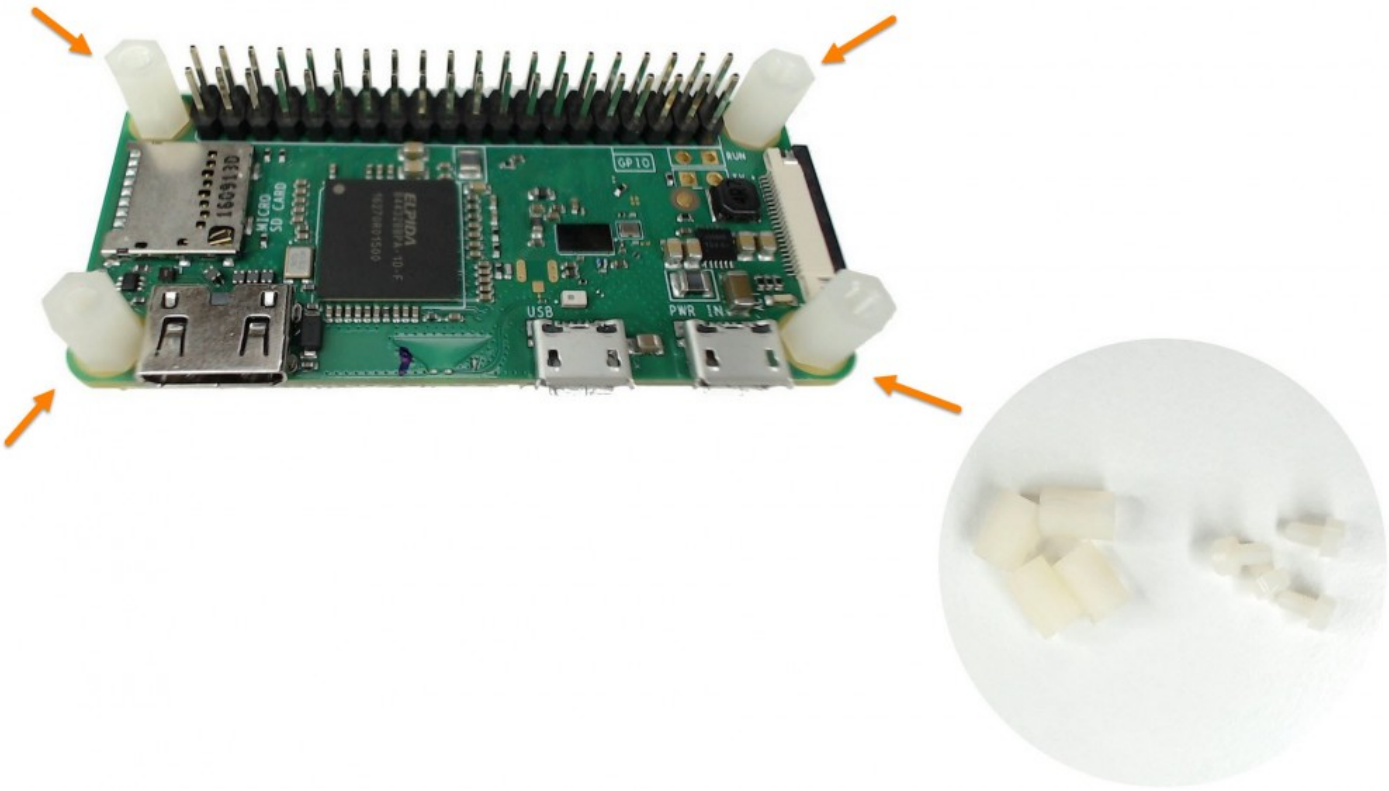
Board Assembly

Step 1 - Unpack your Raspberry Pi.



Step 2 - Install the spacers on the Raspberry Pi as shown here holding them with 4 plastic bolts from underneath the Pi.

The bolts should be screwed in with a PH0 screwdriver.



Step 3 - Get the Flick Zero from its anti-static bag.

Step 4 - Place the Flick Zero on top of the Raspberry Pi by gently pushing the female header onto the Raspberry Pi male header.

If you have acquired the Flick Zero case please skip to the next Section – Flick Zero Case assembly.

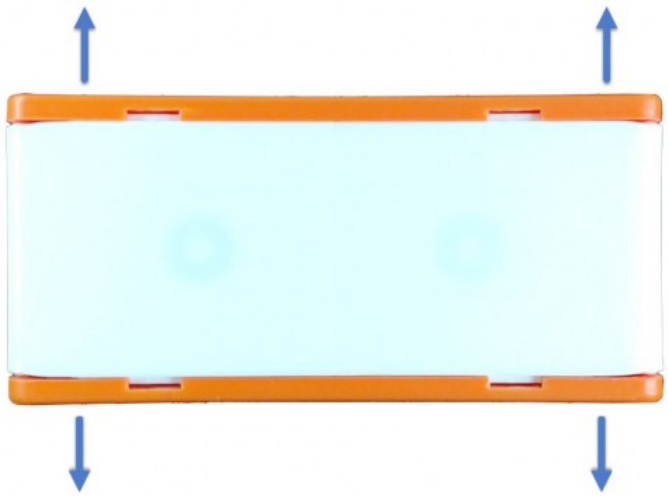
Step 5 - Screw the last 4 plastic bolts to hold the Flick Zero in place.

At this point the Flick Zero is ready to be used.

Flick Zero Case Assembly

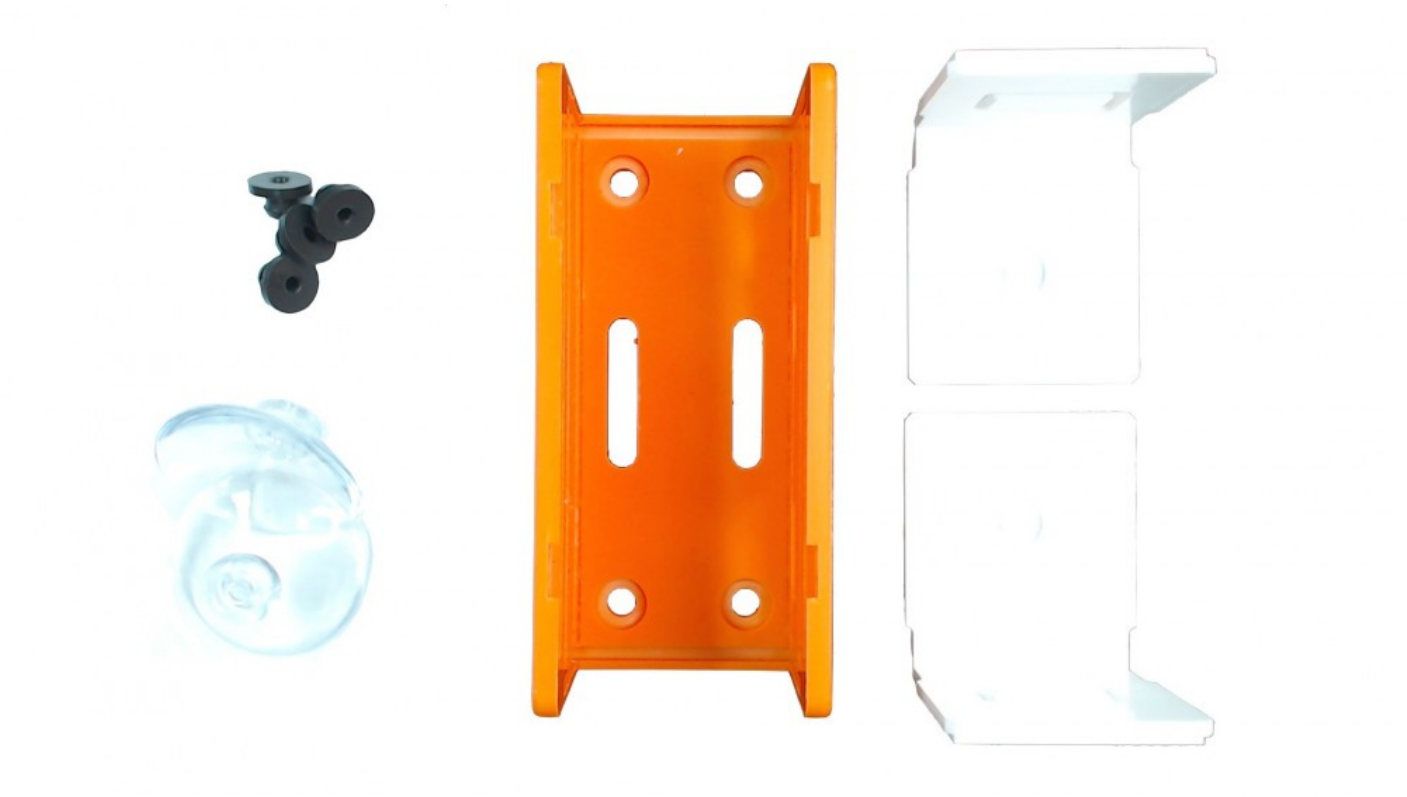
The Flick Zero Case is the prefect enclosure for the Flick Zero.

Step 1 – After removing the protective plastics pull gently out the two sides of the bottom part of the case to unhook the top.

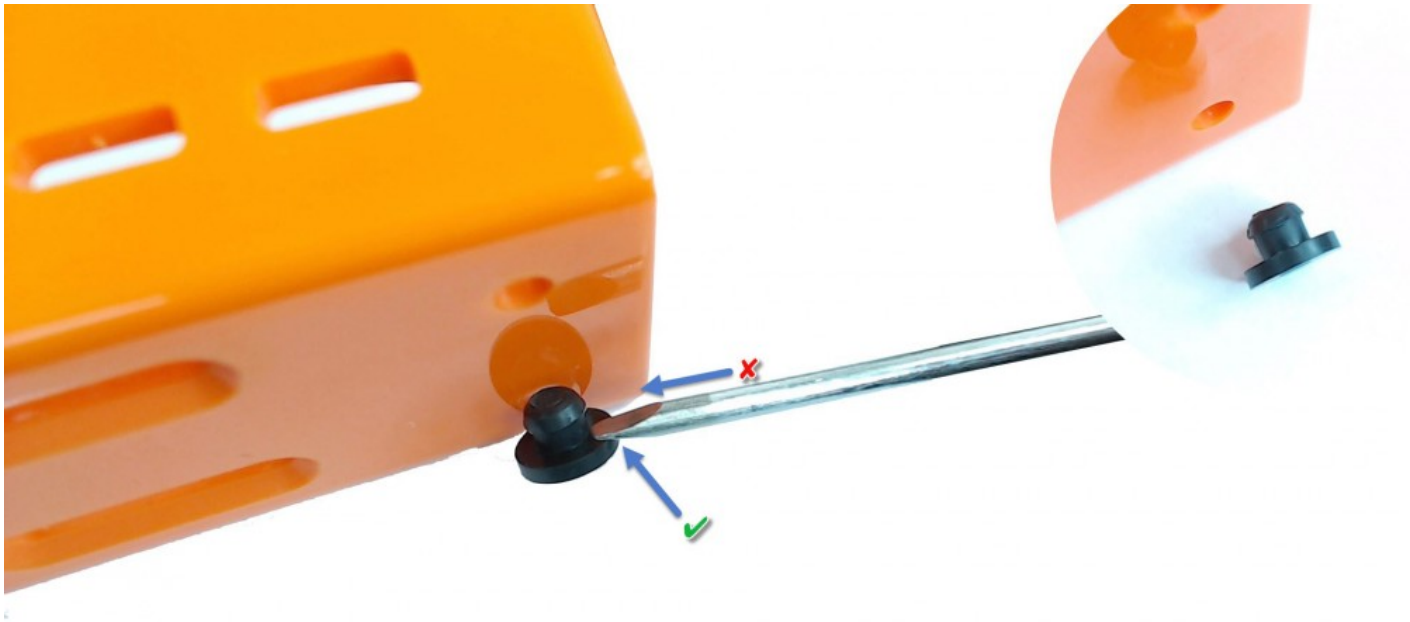


This should allow you to detach the top cover and easily take a part the case.

Within the case you will find 4 rubber feet and 2 suction cups. Here is how it will look like once opened.



Step 2 – To install the rubber feet on the bottom part of the case you will either have to push and twist them through one of the 4 the holes or help yourself with a small screwdriver to tuck in the top part of the feet within the hole as shown on the left. Be careful not to cut through the feet and rather than using the tip of the screwdriver use the flat surface to push the head of rubber foot in.



Step 3 – Insert the Raspberry Pi and the Flick board on the side of the case where you can see the opening for the various connectors.

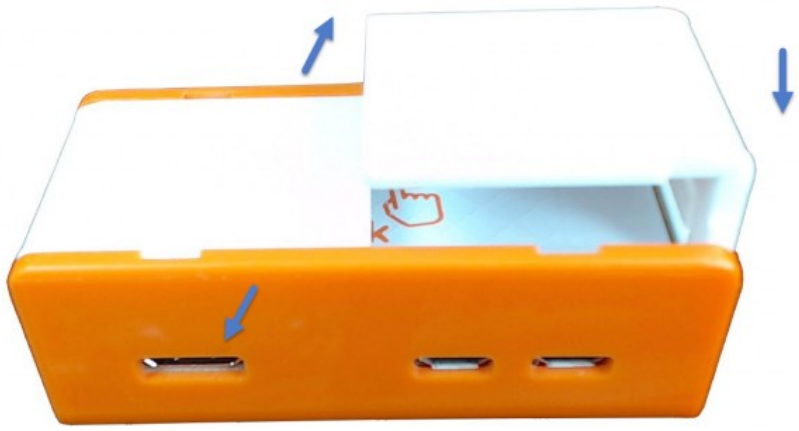
The PCBs of the two boards should be aligned within the grooves of the panel as shown in the picture.

Once the two are fully rotated into position the Raspberry Pi and the Flick board should sit nicely in the bottom part of the case.

If you are not planning on using the suction cups and wish to close up the case then follow the step below otherwise skip to the Section - Flick Zero Case Assembly With Suction Cups.

Step 4 - Push out gently the sides of the bottom part of the case to allow for the white panels to slot back in.

If you are using a Raspberry Pi Zero 1.3 or a W be careful when inserting and removing the white panel as it is a tight fit with the camera connector. Make sure to pull slightly out the plastic so to ease the panel going into place or coming off the case.



At this point the Flick Zero is ready to be used.

Flick Zero Case Assembly With Suction Cups

Step 5 - Install the suction cups on the two white panels.

If you are not sure about how to remove the knock outs for the suction cups please refer to the FAQ below which explains how to it.

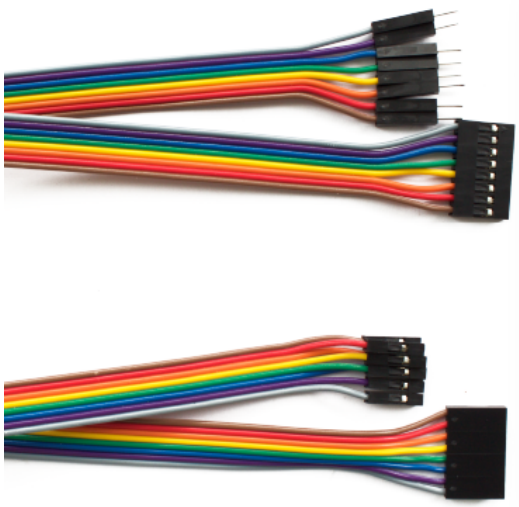
Step 6 - Push out gently the sides of the bottom part of the case to allow for the white panels to slot back in.

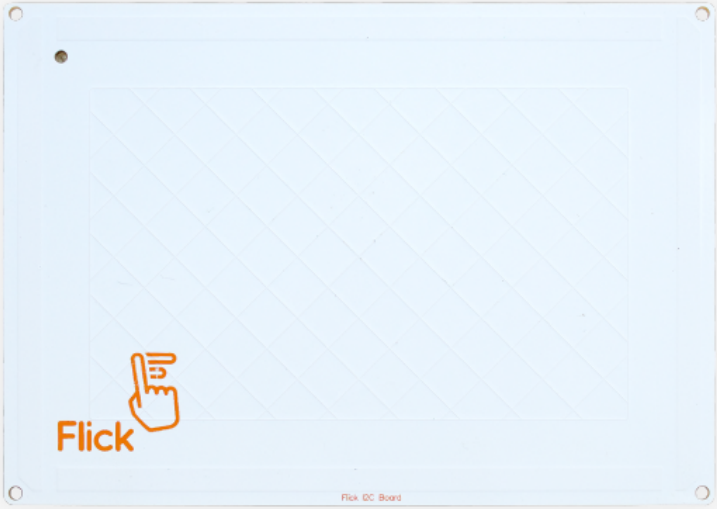
If you are using a Raspberry Pi Zero 1.3 or a W be careful when inserting and removing the white panel as it is a tight fit with the camera connector. Make sure to pull slightly out the plastic so to ease the panel going into place or coming off the case.

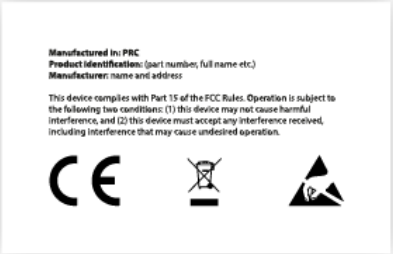
At this point the Flick Zero is ready to be used.

Flick Large Board

Kit contents







Inside the box you should have received the following items:

- 1 Flick large
- 1 Jumper cable female to female
- 1 Jumper cable female to male

- 3 Stickers
- 2 Info card

Board Assembly

Use the female to female jumper cable provided to connect the Flick large to the Raspberry Pi as shown in the picture.

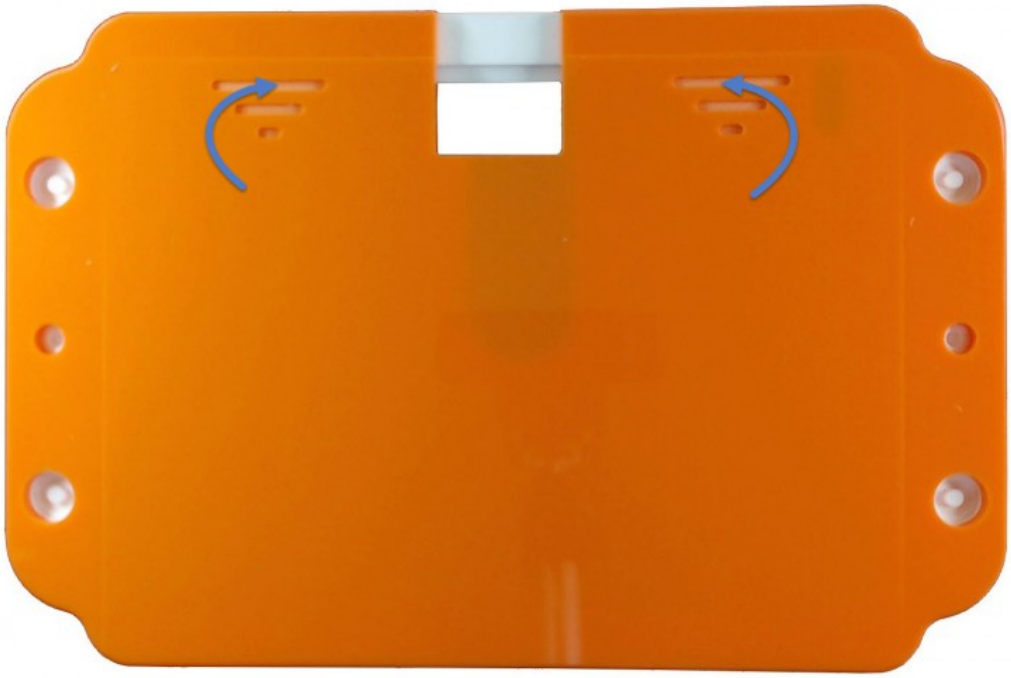
Click to enlarge

If you have acquired the Flick Large case please skip to the next Section - Flick Large Case assembly.

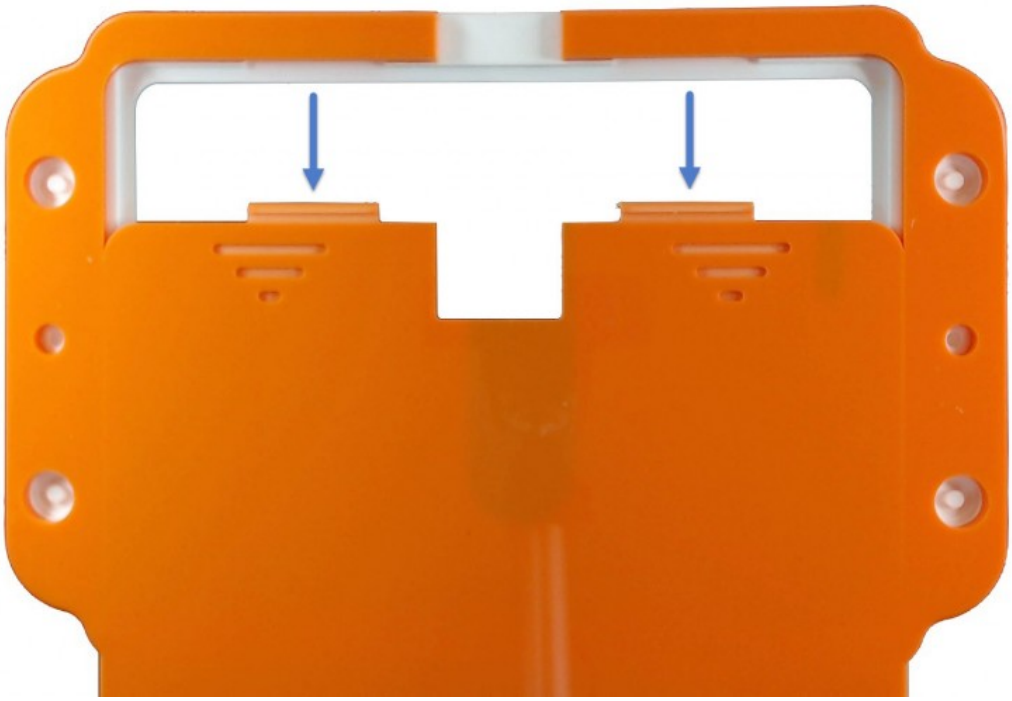
Flick Large Case Assembly

The Flick Large Case is the prefect enclosure for the Flick Large. It has been designed so that it can still allow access to the connector at the back.

Step 1 - Press slightly at the back of the case where indicated in the picture do unhook the back panel.

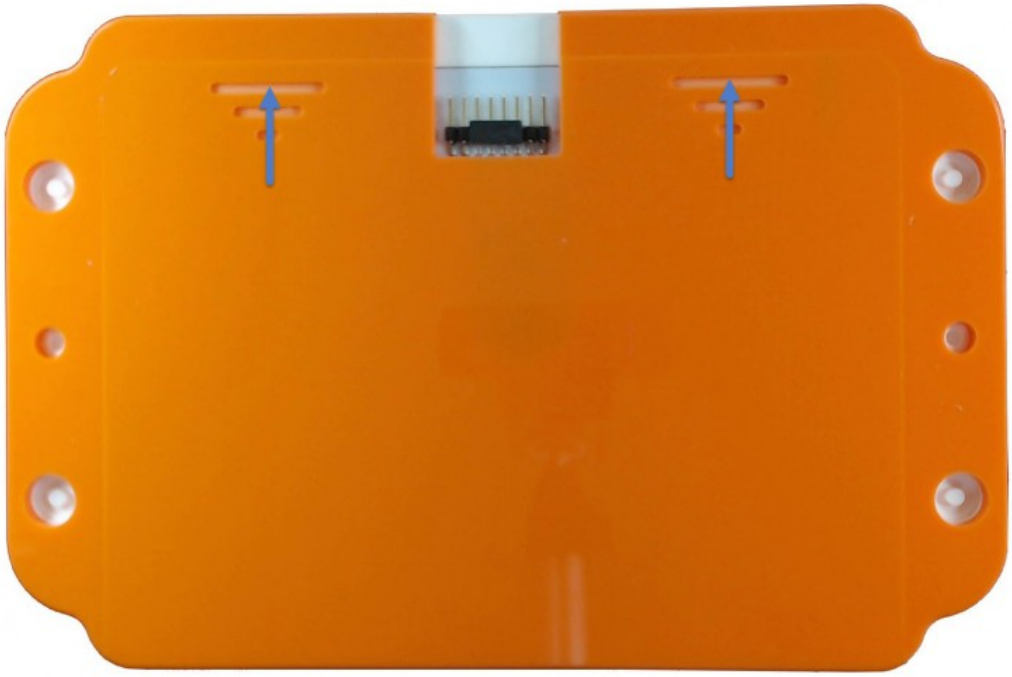


Step 2 - Slide out the panel.



Step 3 - Place the Flick Large with the top corners going in first.

Step 4 - Slide the panel back in place until you hear a click.



At this point the Flick Large is ready to be used.

If you wish to install the suction cups please refer to the FAQ below which explains how to do it.

FAQ

Why did I get suction cups with my case?

The Flick boards can work through a number of materials and can then be concealed in a number of ways. One is by using the Flick cases and with the suction cups provided fix them under or behind a suitable surface e.g. a table, a mirror, a glass, etc.

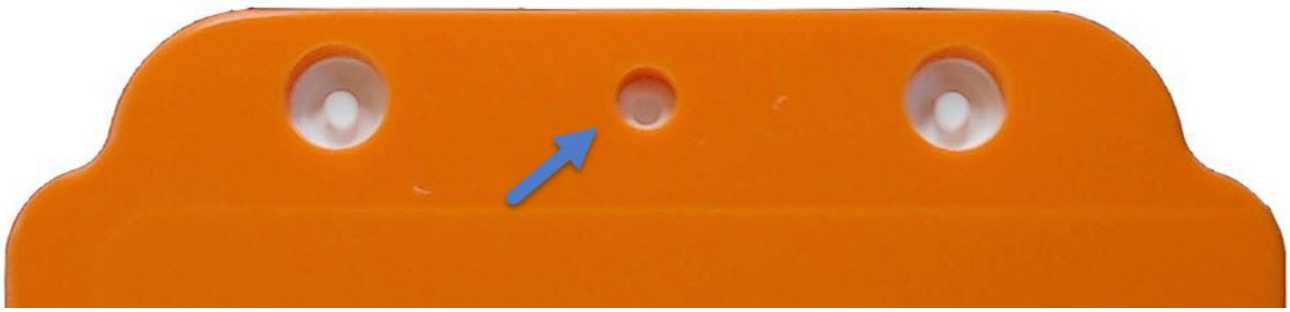
To install the suction cups use a pen or something like a chopstick to pierce through the plastic of the case as shown in the sequence below. Then push the suction cup in place with the help of a screw driver.

Please note that the sequence below has been done for the Flick Zero Case but can be used for all other cases.

Here you can see where on each case the knock off points for the suction cups are. In order from left to right, the Flick Zero Case has two (one on each panel), the Flick HAT Case has four (two on each panel) and the Flick Large Case has four.

Can I install the Flick Large Case with screws?

The Flick Large Case allows not only to be installed with suction cups but also provides two drill holes one on each side as shown in the picture. It is advisable to use a 3 mm drilling bit.



Can I use the HAT and Zero case with the Flick Large ?

Both the Flick Zero Case and the Flick HAT Case are provided with knock outs to allow the cable for the Flick Large to go through when the cases are closed. The Zero comes with 2 knock outs one on each panel where as the HAT comes with 3 as shown in the picture.

How do I drive the LEDs on the Flick Large?

The Flick Large comes with a customisable dual colour LED. The Red is connected by default to Pin 7/GPIO 4 of the Raspberry Pi and the green to Pin 15/GPIO 22. You can of course connect them to other pins if for some reasons you need Pins 7 and 15 for something else.

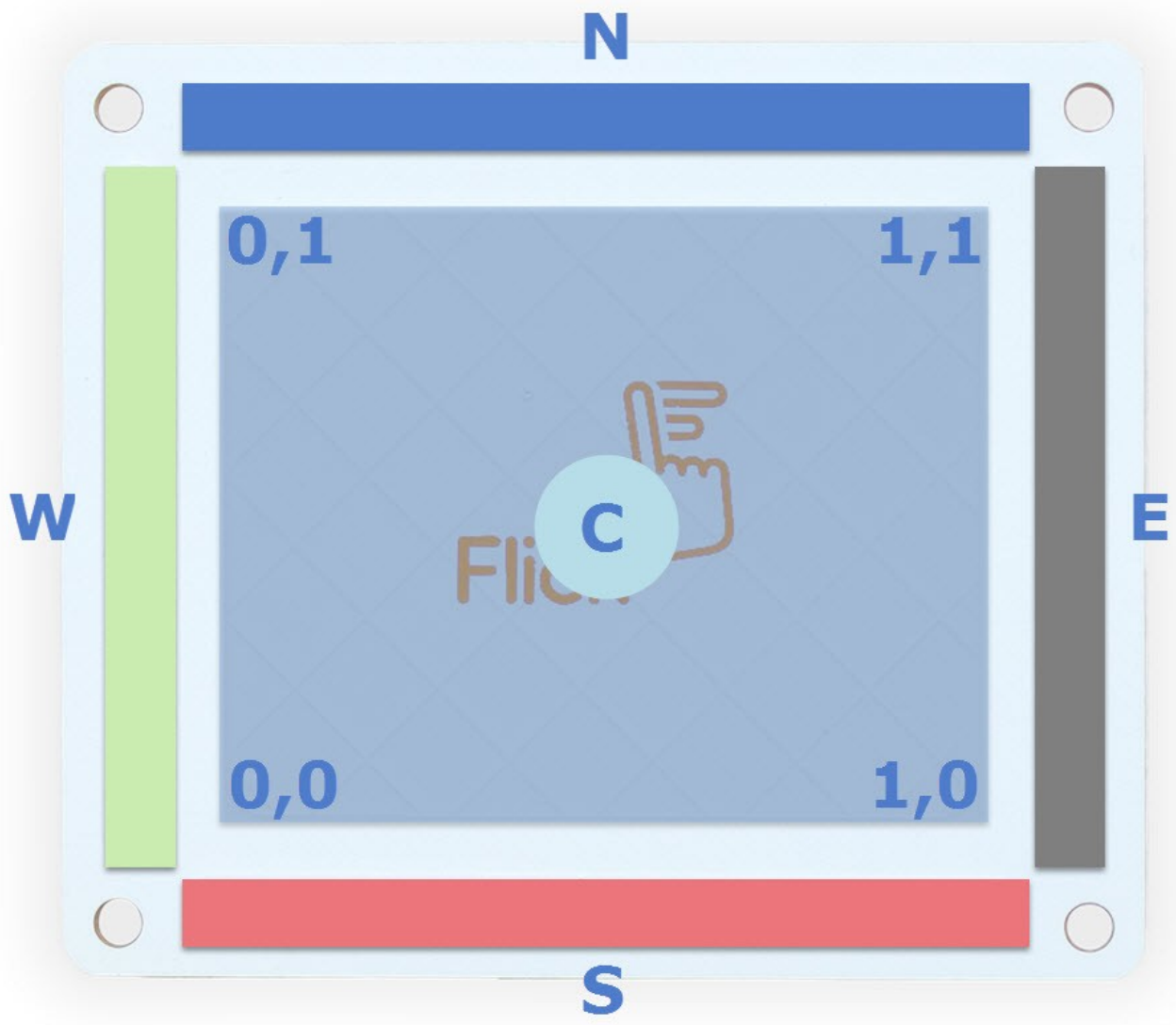
Why is the XYZ reported erratically?

As you move your finger over the board the electric field is altered. The board detects that and assigns values for the three axis based on the Gestic® Technology. As your finger moves you will also gradually place the rest of your hand on the board too. The chip will then get confused on which part of the hand to follow. To get better results simply try to keep your finger as perpendicular as possible to the board.

Where are the electrodes and where is the coordinates origin?

On board of the flick there 5 electrodes one for each cardinal point and one in the middle. As you move your hand over the board these electrodes will determine the type of gesture you are making e.g. you move from the East one and on to the West resulting in a Swipe Left.

The set of coordinates used has the origin in the South/West (Bottom/Left) corner. With the XYZ gesture you will notice that each set of coordinates spans between 0 an 1 independently from the type of board that you use. What you will be reading then is not the physical distance between two points on the board but rather the percentage of that length. On the picture we showed only two of the coordinates but bare in mind that in reality there is a third related to the distance of your hand from the board.



How do I know everything is working as it should?

Run

on the command line and you should get a screen like the following

Also refer to our GitHub repository for any other software related query.

Which pins are used by Flick?

Note that the each of the pinouts is shown from the point of view of the actual board's connector. When looking at the Flick Large in particular note on the left the "To Raspberry Pi" which explains how each pin is mapped on the Raspberry Pi header.

Click to enlarge