FLipMouse Graphical User Interface

User Manual



# Preface

The FLipMouse graphical user interphase (GUI) is intended for use in conjunction with the FLipMouse device, developed by the AsTeRICs academy. This user manual includes a description of the user interface and its available features, as well as explanation of how to use the features. The FLipMouse GUI does not require prior installation; however the communication (also known as COM) port may require additional installation. The steps for the installation are described on page 4. The installation file is provided by the PJRC website.

# Contents

[Driver Installation 4](#_Toc414308414)

[The User Interface 7](#_Toc414308415)

[Features 11](#_Toc414308416)

[Cursor Movement 11](#_Toc414308417)

[Alternative Actions 12](#_Toc414308418)

[Sip/Puff Actions 13](#_Toc414308419)

[Buttons Actions 16](#_Toc414308420)

[View Raw Data 17](#_Toc414308421)

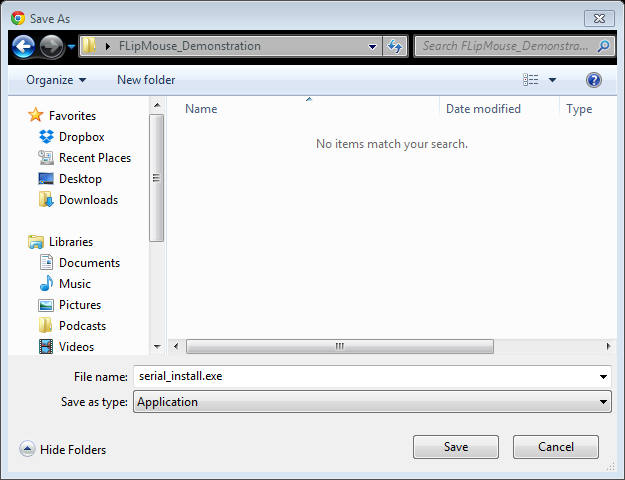
[Index 18](#_Toc414308422)

# Driver Installation

For the FlipMouse GUI to work, the application needs to be able to send and receive information from the FlipMouse device. The information transfer occurs through a communication port (COM port) that is installed on the computer. To install a COM port, please visit the following link to save the installation file:

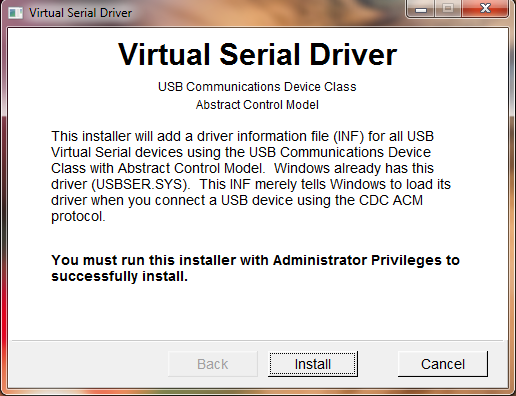
<https://www.pjrc.com/teensy/serial_install.exe>

When prompted, save the file to the desired location on your computer by clicking “Save” in the bottom right corner.



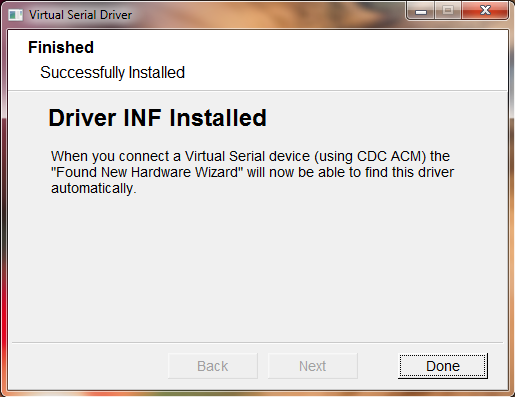
After the file has been successfully saved, open it to begin the installation process.

The following window will appear after opening the file:



Please make sure you have Administrator Privileges, and click the install button.

When the installation is complete, the following window will appear:



The installation process is now finished; please click the “Done” button.

After finishing installation, please connect your FlipMouse device using a mini USB cable.

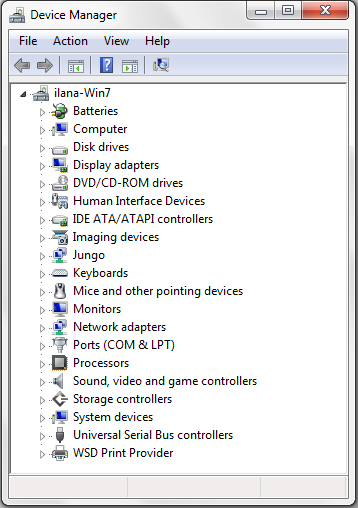


Connect this end to a USB port in your computer

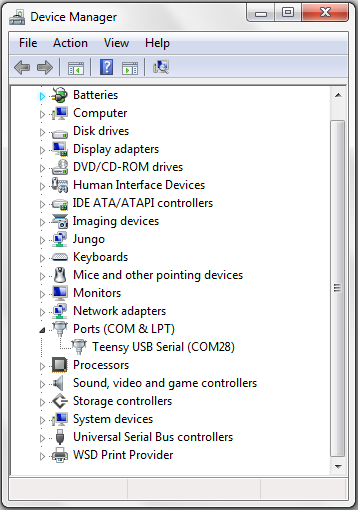
Connect this end to the FlipMouse

After making sure that the device is securely connected to the computer, you may check if the device’s COM port is successfully detected. This might take a couple of seconds.

To check if a COM port is detected, go to Control Panel on your computer, and select Device Manager. A window similar to the one below should be opened:



The COM port for your FlipMouse should be here. You can click on “Ports” to extend the list of ports connected to your computer.



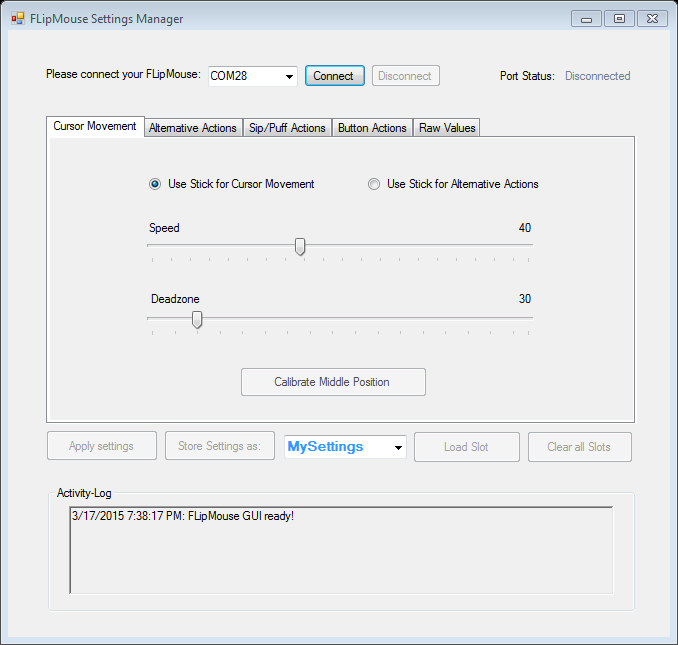
The port name is shown here. In this example it is “COM28”, however the number is arbitrary and gets automatically selected by your computer.

If you see a COM port as in the example above – congratulations! You are now ready to use the FlipMouse GUI.

# The User Interface

To begin using the FLipMouse user interface, you must open the FLipMouseGUI.exe file.

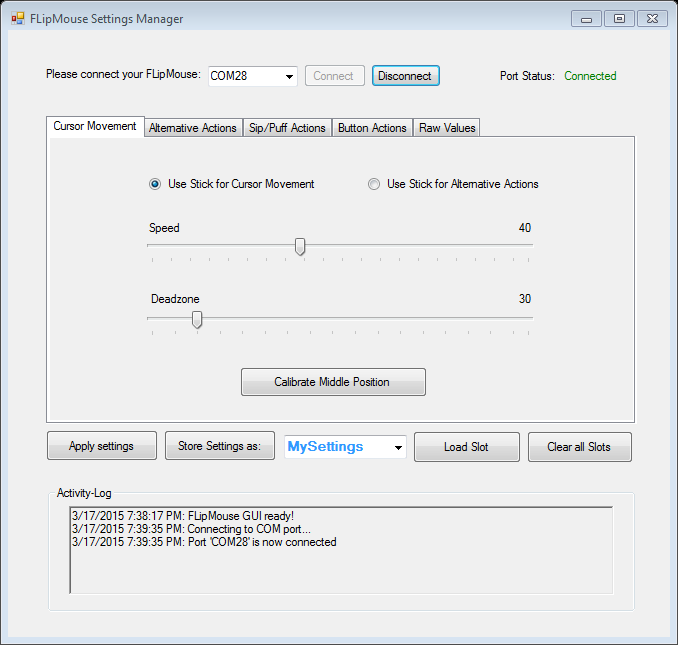
After opening the file, the following window will be displayed:



#### Connecting the FLipMouse Device

In order to be able to use the features of the FLipMouse GUI, the FLipMouse device must be connected to the application. To connect the device, follow the following steps:

1. Make sure your device is securely connected to your computer.
2. Select the appropriate COM port (communication port) in the combo box at the top of the application window. If the combo box appears empty, it means that no port has been detected. In this case, please reconnect the device and wait for the COM ports to be updated, and then refresh(unless this won’t be available) or restart the application.
3. Once the COM port is selected, click the Connect button on the right hand side of the combo box. When the device is connected, a confirmation message will appear in the Activity Log at the bottom of the application window, like the example below:



#### Port Status

The port status is located at the top right hand corner of the application window. It displays whether the device is currently connected or disconnected from the user interface. The functions of the user interface may only be used if the port status is “connected”.

#### Activity Log

The activity log is located at the bottom of the application window. It provides messages in accordance to the use of the application.

#### Applying Settings

#### Saving and Clearing Slots

# Features

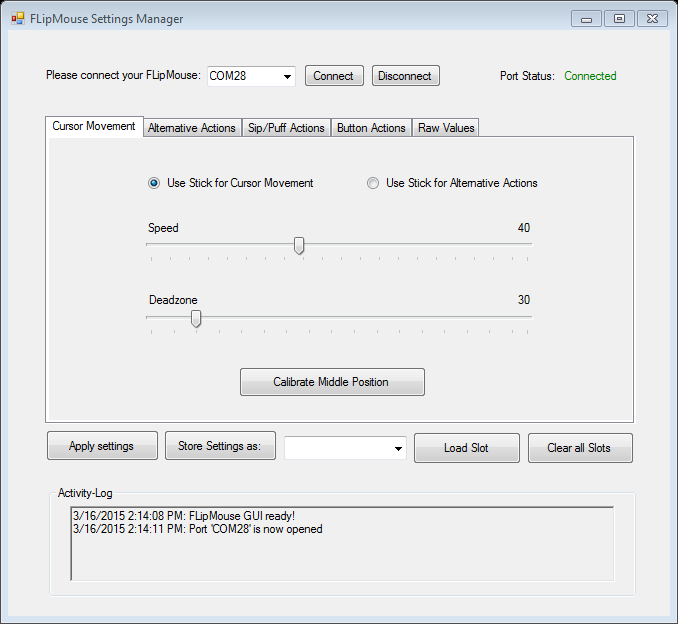
## Cursor Movement

Cursor movement is the default tab of the user interface. On this tab, you will be able to change the function of the FLipMouse stick, change the speed and deadzone of the FLipMouse, and calibrate the middle position.

#### FLipMouse stick function

By default, the FLipMouse stick is used like a joystick to induce cursor movements. However, stick movements can also be reassigned to other function, such as pressing the key ‘A’ when the stick is pushed up.

To continue using the FLipMouse stick for cursor movements, make sure “Use Stick for Cursor Movement” is selected, as in the picture below. If you would like to assign alternative actions to the stick, please select the “Use Stick for Alternative Actions” option by clicking on the appropriate text or the circle on the left side of the text.



#### Speed

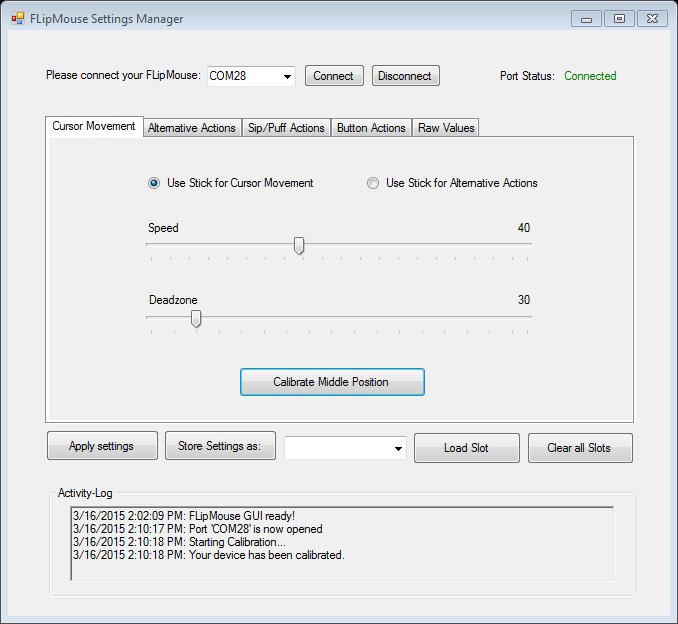
When using the stick for cursor movement, the cursor can be moved at different speeds. The speed scroll bar displays the selected speed for the FLipMouse and it is also represented by a number on the top right of the scroll bar. A smaller value results in slower speed, and a larger value results in faster speed. To change the speed, click and drag the thumb to the left for slower speed and right for higher speed.

#### Deadzone

The deadzone of a FLipMouse changes the sensitivity of the stick movements. When the deadzone value is very low, very slight stick movements can cause cursor movement, or execute an assigned alternative function, if “Use stick for alternative function” is selected. If the default sensitivity is too strong, the deadzone may be increased so that a greater stick movement will be necessary to cause cursor movement. Changing the deadzone is similar to changing speed. Click and drag the thumb of the scroll bar to the left for smaller deadzone and right for a bigger deadzone.

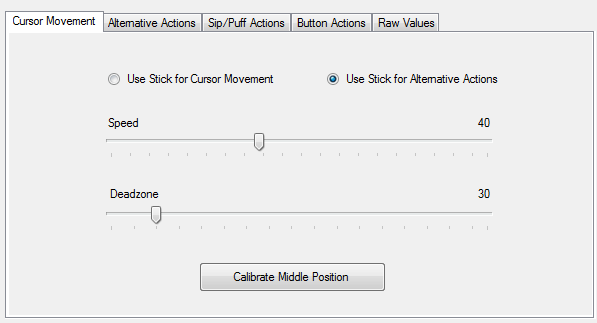
#### Middle point calibration

##### When using the stick for cursor movement, the cursor should stay in place when the FLipMouse is not used. Sometimes the rest position of the mouse may become inaccurate and cause unwanted cursor movements, even if the stick is not used. If the cursor starts moving wrongly, the middle point should be calibrated by pressing the “Calibrate Middle Position” button. When the FLipMouse is successfully calibrated, a confirmation message will appear in the activity log.

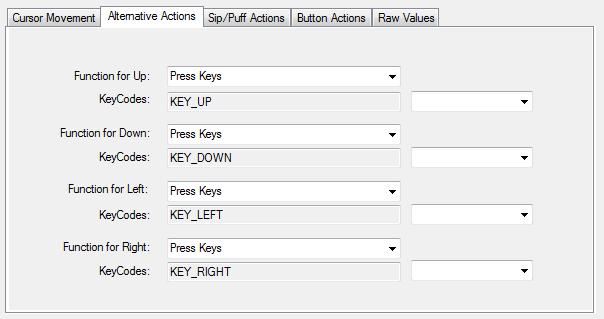


## Alternative Actions

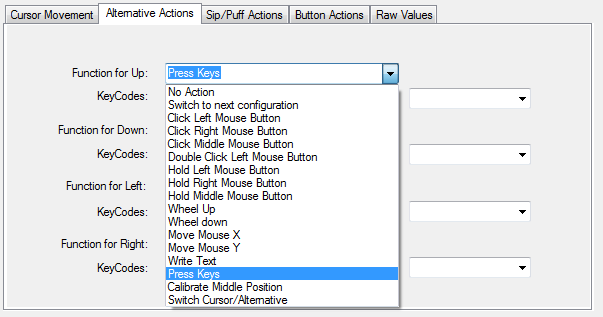
When “Use stick for alternative actions” is selected in the Cursor Movement tab, you may use the Alternative Actions tab to assign alternative actions to the movement of the FlipMouse stick.



There are four possible FlipMouse stick movements to assign alternative funtions to: up, down, right, left. Accordingly, there are four drop down menus from which you may choose an alternative action for each stick movement. To see the options, you must press on the arrow of the drop down menu.

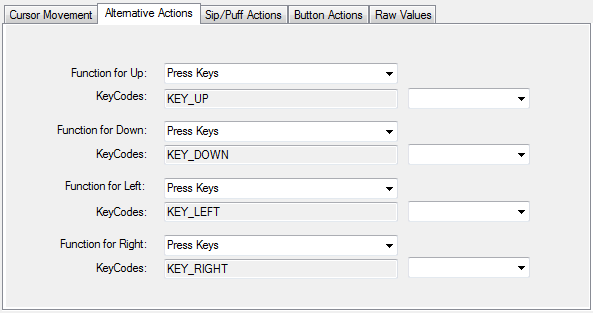


Press here to see more options!



#### Pressing keys

By default, alternative actions for all four possible stick movements are preselected as key presses.



This gray text field is read-only and is automatically filled when selecting a key combination from the drop down menu on the right

This drop down menu includes all the possible key presses.

When a key is selected from the drop down of possible key presses, it is added to the key code field and once the settings are applied, it the key will be pressed whenever the stick is moved to the respective direction. If you would like to change the assigned key, you must select “clear keycodes” before selecting a new key. If you do not clear the keycode prior to reselecting, both keys will be pressed when the stick movement is executed.

Sometimes pressing multiple keys is the desired outcome, so if you would like to press multiple keys at once, simply select the appropriate keys and they will be added to the key code.

Common key combinations include: KEY\_CTRL + KEY\_ALT + KEY\_ DELETE

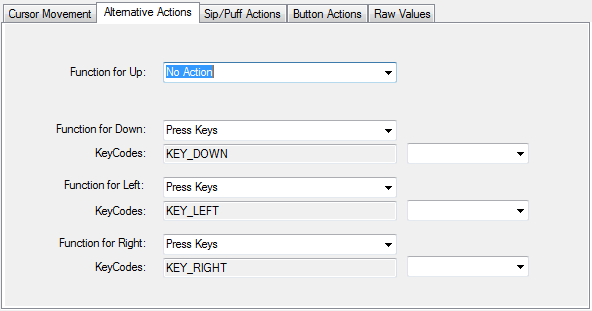
KEY\_CTRL + Z: triggers undo function

KEY\_CTRL + C: triggers copy function

KEY\_CTRL + V: triggers paste function

#### No action

If “No action” is selected from the function menu, then no action will be done when executing a particular movement. For example, consider the following case:



In the picture, “No action” is selected for “Function for Up”. This means that if you move the FlipMouse stick in the upwards direction, nothing will happen.

#### Click left/middle/right mouse buttons

FlipMouse stick movements can act as mouse buttons. You may assign any desired stick movement direction to trigger either a right click, a middle click or a left click.

#### Double click left mouse button

Double clicking the left mouse button may be necessary in cases such as opening a file. However, producing a double click with the regular click mouse button function may not be convienent, so you may assign a double click of the left mouse button instead.

#### Hold left/middle/right mouse buttons

The click mouse button options immitate a quick mouse click, however sometimes it is necessary to continue pressing a particular mouse button (for exampe, when dragging a file, continuously pressing the left mouse click is necessary). For this purpose, the FlipMouse application allows assigning a button holding functon to one of the stick movement directions.

#### Wheel up/down

#### Mouse move x/y

#### Write text

#### Calibrate middle position

#### Switch cursor/alternative

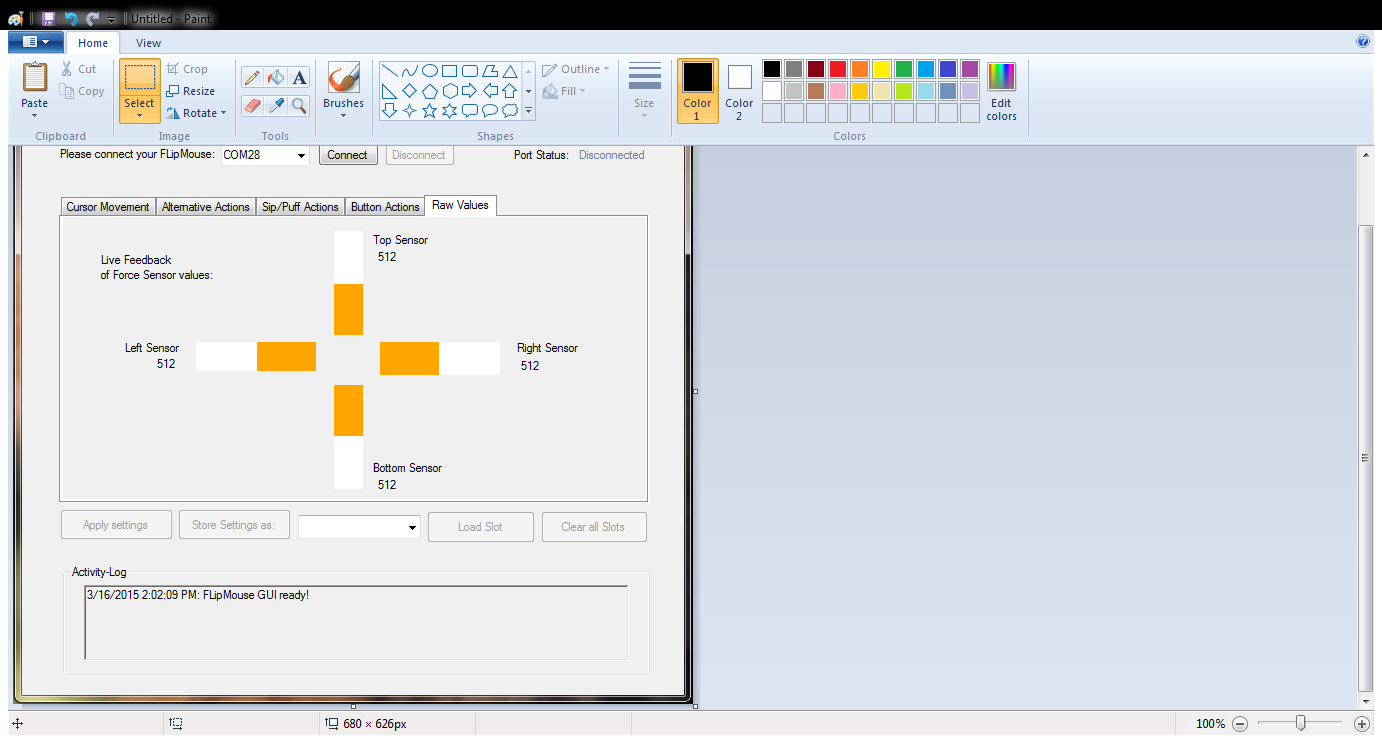
## Sip/Puff Actions

When using the FlipMouse stick with the mouth, the user can trigger functions by sipping or puffing through the tube. The tube is connected to a pressure sensor, which outputs a number that corresponds to the detected pressure. When the user sips, the sensor value decreases, and when the user puffs the value increases. When the FlipMouse is connected, you can check how the pressure values change in the Sip/Puff Actions tab.

## Buttons Actions

The FLipMouse has three built in buttons on the side of the device (I can’t remember the exact location… a picture of this might be useful too).

## View Raw Data



The FLipMouse stick is connected to four sensors for each movement direction (up, down, left, right). The numeric value of each of those sensors is displayed in the Raw Data tab. When the stick is moved, the sensor values change. Specifically, a movement in each direction increases the respective sensor value. The sensor values also depend on how tightly the device is assembled, therefore when assembling the FLipMouse, the raw sensor data can be used as guidance.

(adding a photo of the lipmouse sensor and the screws would be nice, also need to figure out which values are optimal for assembly)

# Index

Activity Log, 5

buttons, 9

calibrate, 7

COM port, 4, 5

cursor, 7, 8

deadzone, 7

Port Status, 5

speed, 7