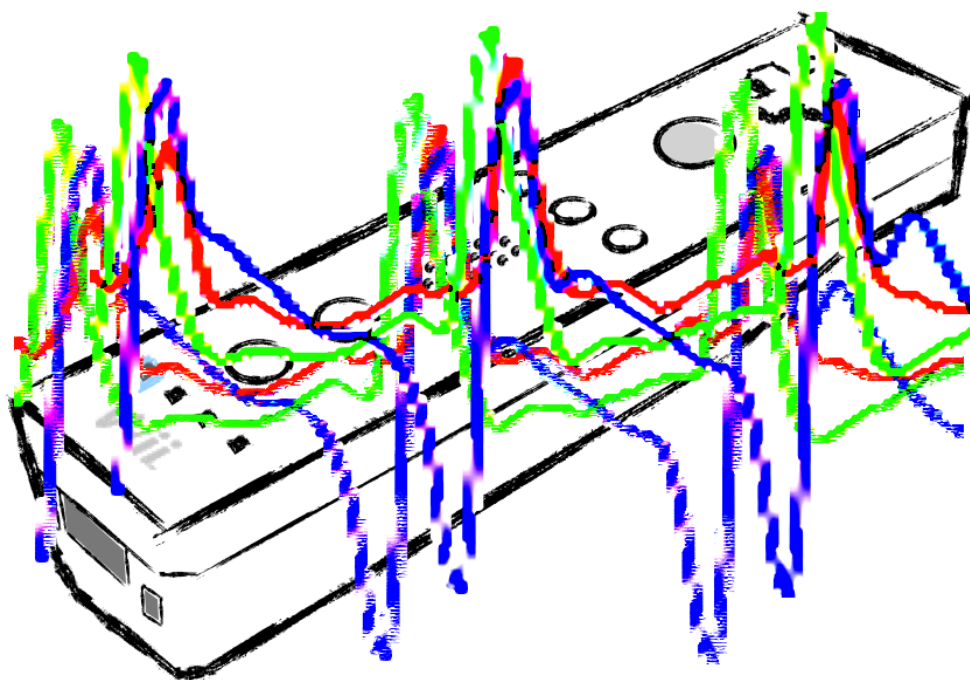


# WiiDataCapture Manual



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Version 2.2, 2012

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(10.10.2012)

## Prerequisites

- Mac OS X 10.4 - 10.6 (probably 10.7 and 10.8 also work, but have not been tested)
- Bluetooth
- 1 to 8 Nintendo Wii remote controllers
- OSCulator - available from <http://www.osculator.net> (version of this manual: 2.12.3)
- WiiDataCapture

## What is OSCulator?

OSCulator is a software that links your controllers to your music and video software. In our case, OSCulator receives data from the Nintendo Wii remote control via Bluetooth and prepares them to be used in WiiDataCapture. It can handle up to 8 Nintendo Wii devices. OSCulator uses OSC - Open Sound Control - a protocol for real-time communication among computers and multimedia devices in network environments.

The software is shareware (\$19-39), but a free version is available that occasionally stops transferring data for 30 seconds. So registration is recommended ;-)

OSCulator is available in two versions. Which version you can use depends on your operating system. If you are running OS 10.5 or higher on an Intel machine, you can/should use version 2.12.3 or higher (what is called "Stable" on the OSCulator website). However, if you run OS 10.4 on Intel or PowerPC, you should use version 2.9.6 (what is called "Legacy" on the OSCulator website). In the old version, the pairing of the Wiimotes with OSCulator works differently than described in this manual: after opening OSCulator, you pair and connect the Wiimotes by clicking on "Start discovery" in the Wiimote drawer of Osculator and then pressing "1" and "2" simultaneously on the Wiimote. After the Wiimote is recognized, the steps to set up the software remain the same as described below (starting from 3), though things might look a little different.

## What is WiiDataCapture?

WiiCapture is a small piece of software that listens to the port where OSCulator has sent the Wii data to, and reads in, displays, and records that data. It can handle up to 8 Wiimotes.

### New in version 2.2

- adjust sample rate of Wiimotes manually
- audio trigger adjustments
- use SoundFlower as sound input source

## Contact!

In case of questions, comments, bugs, thank-yous, don't hesitate, but write an email to [birgitta.burger\[at\]jyu.fi](mailto:birgitta.burger[at]jyu.fi).

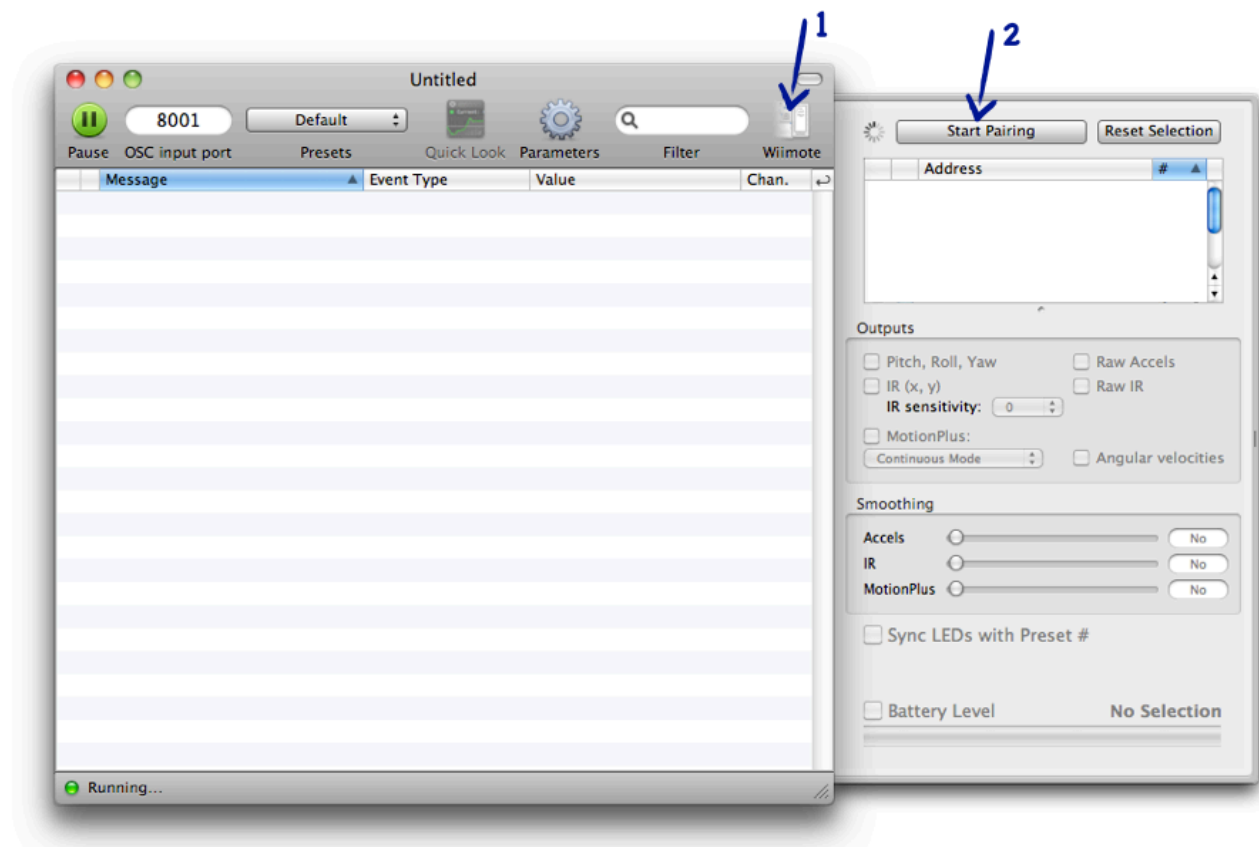
# How does it work?

## OSCulator

First, OSCulator has to discover your Nintendo Wiimote(s). If Bluetooth is not activated yet, activate it (icon in the taskbar or System Preferences).

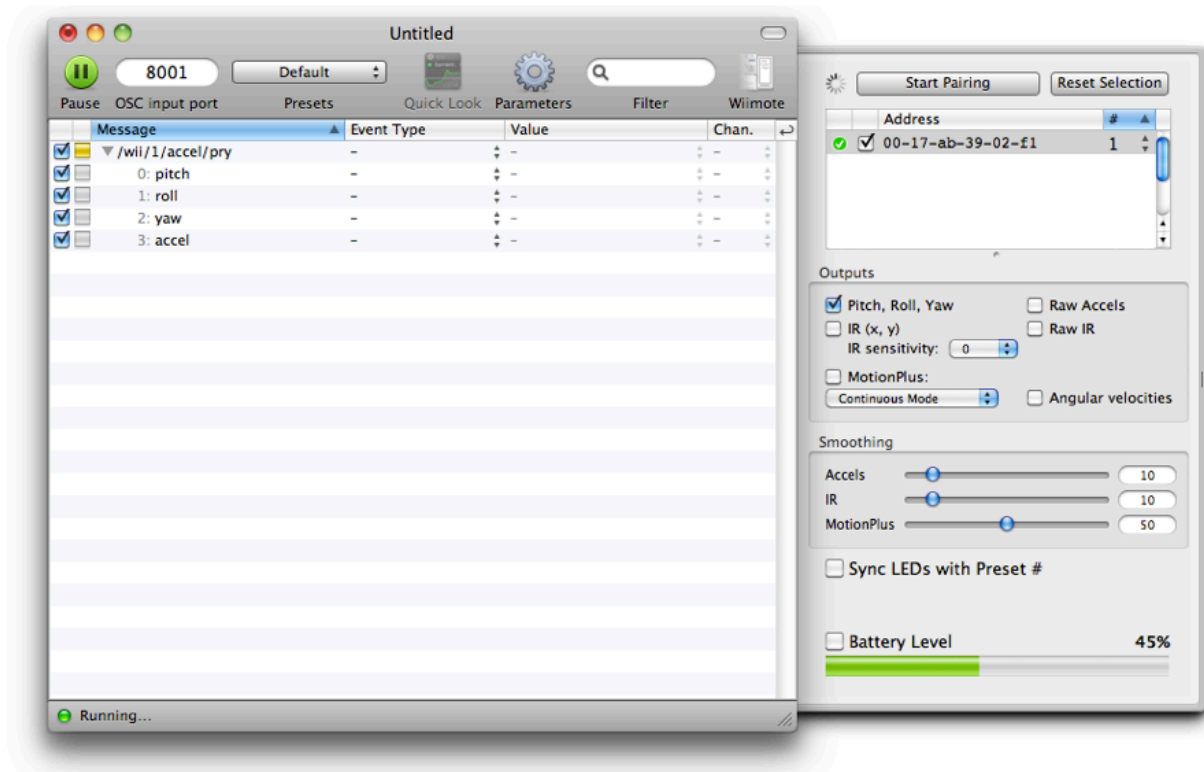
In case you neither have paired any Wiimotes nor used OSCulator before, start by opening OSCulator, click on “Wiimote” to open the side drawer (1). Next, remove the battery cover on the back of the Wiimote and click “Start pairing” in OSCulator (2). Then press the red button below the batteries. After a while, the Wiimote should appear in the OSCulator.

If you have used an earlier version of OSCulator with Wiimotes that could be connected by pressing the 1 and 2 buttons simultaneously on the Wiimotes or have paired Wiimotes without using OSCulator, try to pair the Wiimote with OSCulator by clicking on “Start pairing” while pressing the “alt” key on the keyboard. This will put OSCulator into the “pairing reset” mode. Then press the red button below the batteries of the Wiimote. If the Wiimote does not show up in the OSCulator window after a while, but connects to the computer (see the little Bluetooth icon in the task bar), you might have to delete the connection in the System Preferences first. The easiest way to do so is to have the Wiimote connected to the computer and then click on the Bluetooth icon in the task bar and open the Bluetooth preferences (or open the System Preferences and then choose Bluetooth). Then you delete the connected Wiimote (green light) by clicking on the minus below the entries. After that you try pairing with pressing “Start pairing”. You can try the alt key plus “Start pairing” as well, if the previous option does not work. You might need to restart the computer or close and re-open OSCulator to get it working.

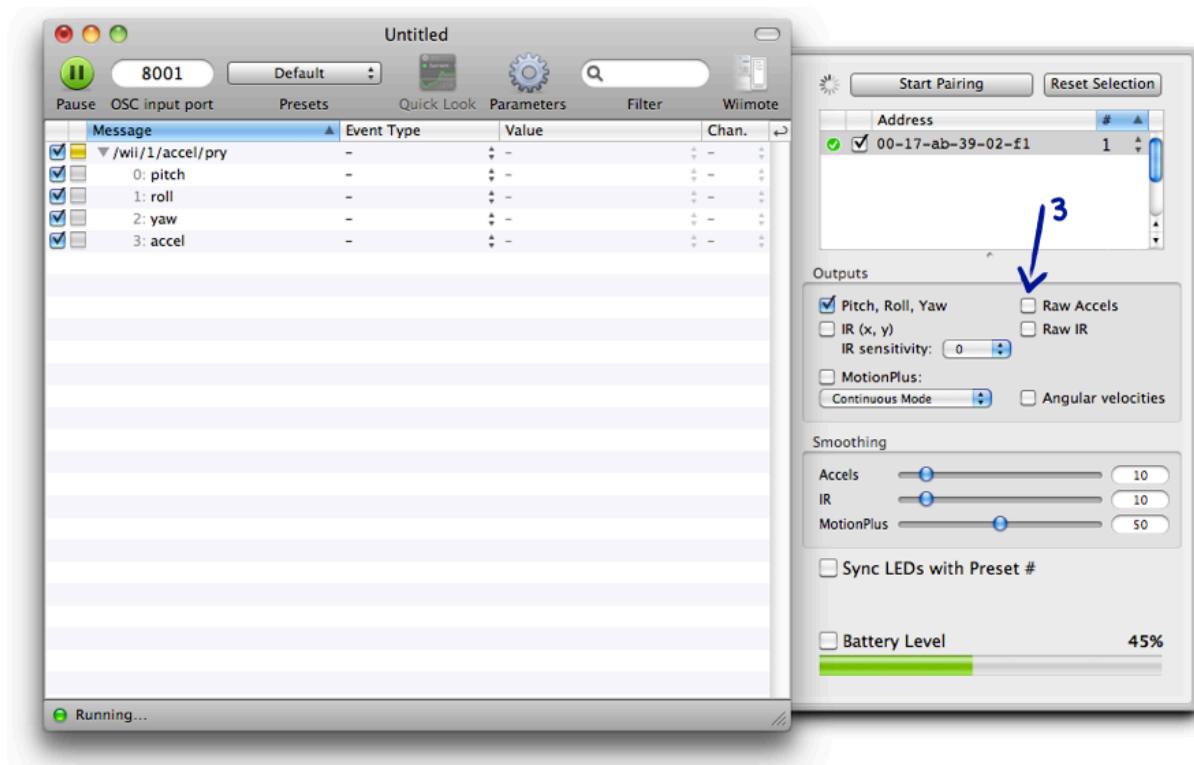


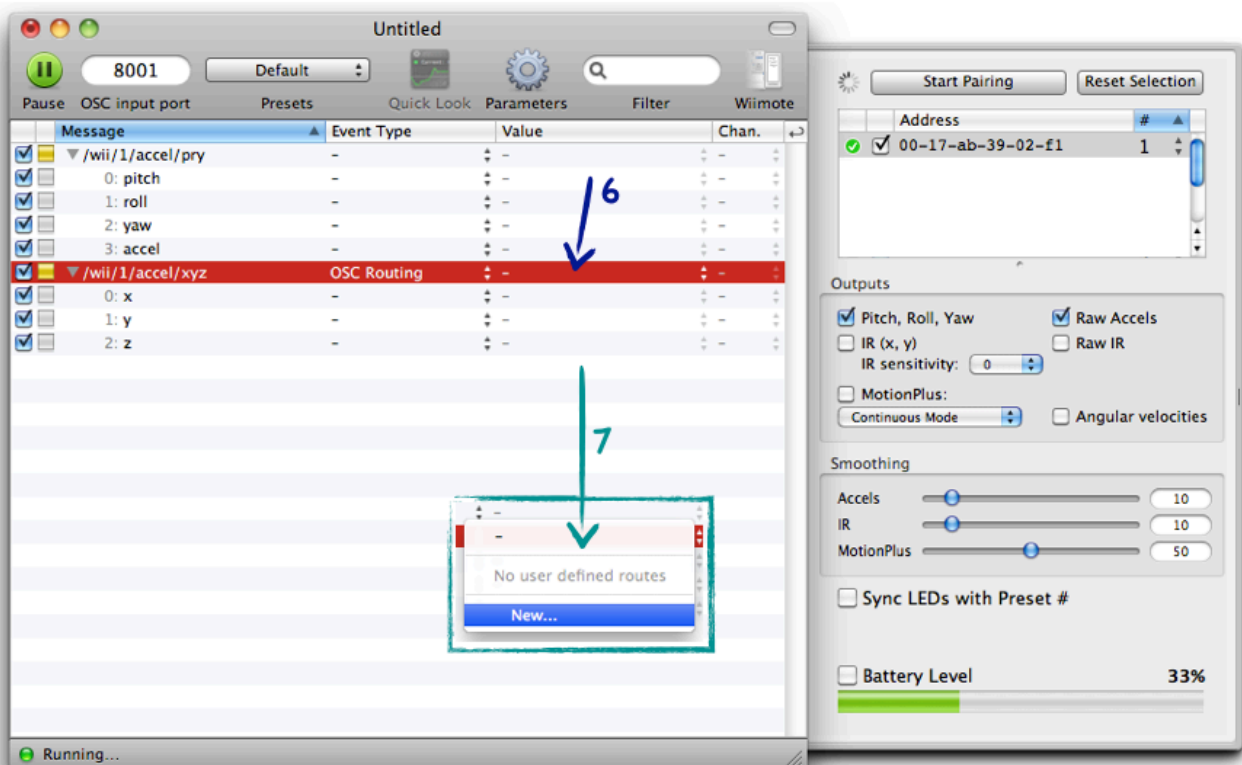
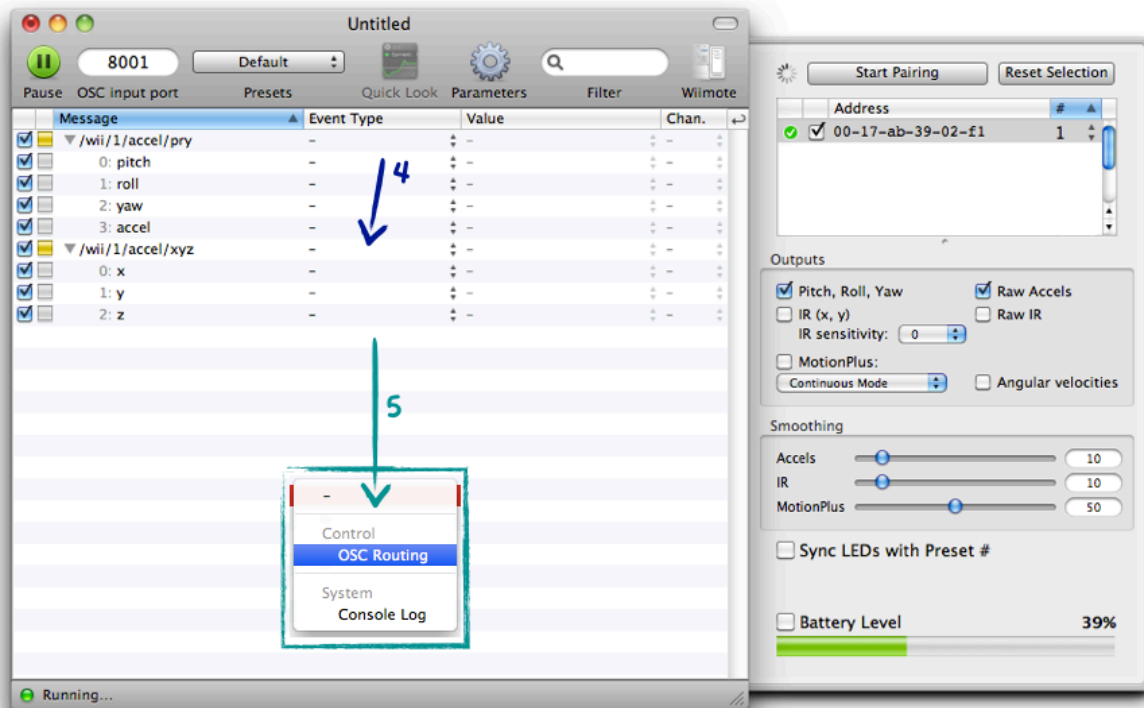
You only need to pair your Wiimote once. After that, you can connect it with OSCulator by pressing any button on the Wiimote (just one, not more). You might have to try it several times until it works.

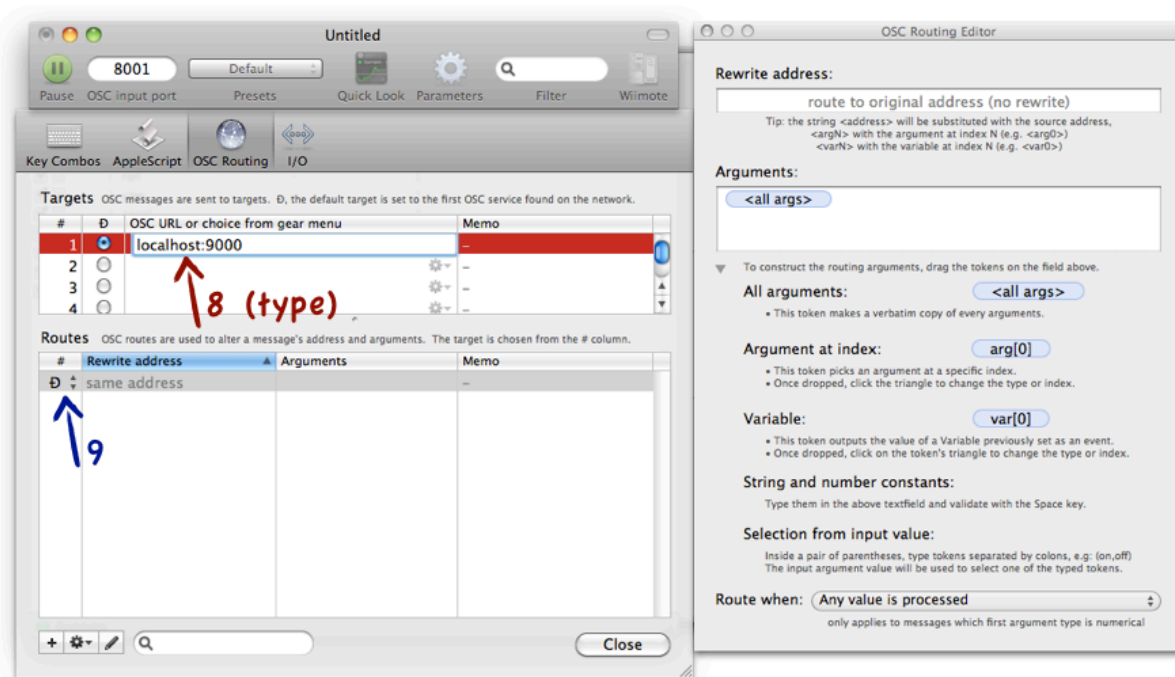
After you have connected your Wiimote, it should look like this:



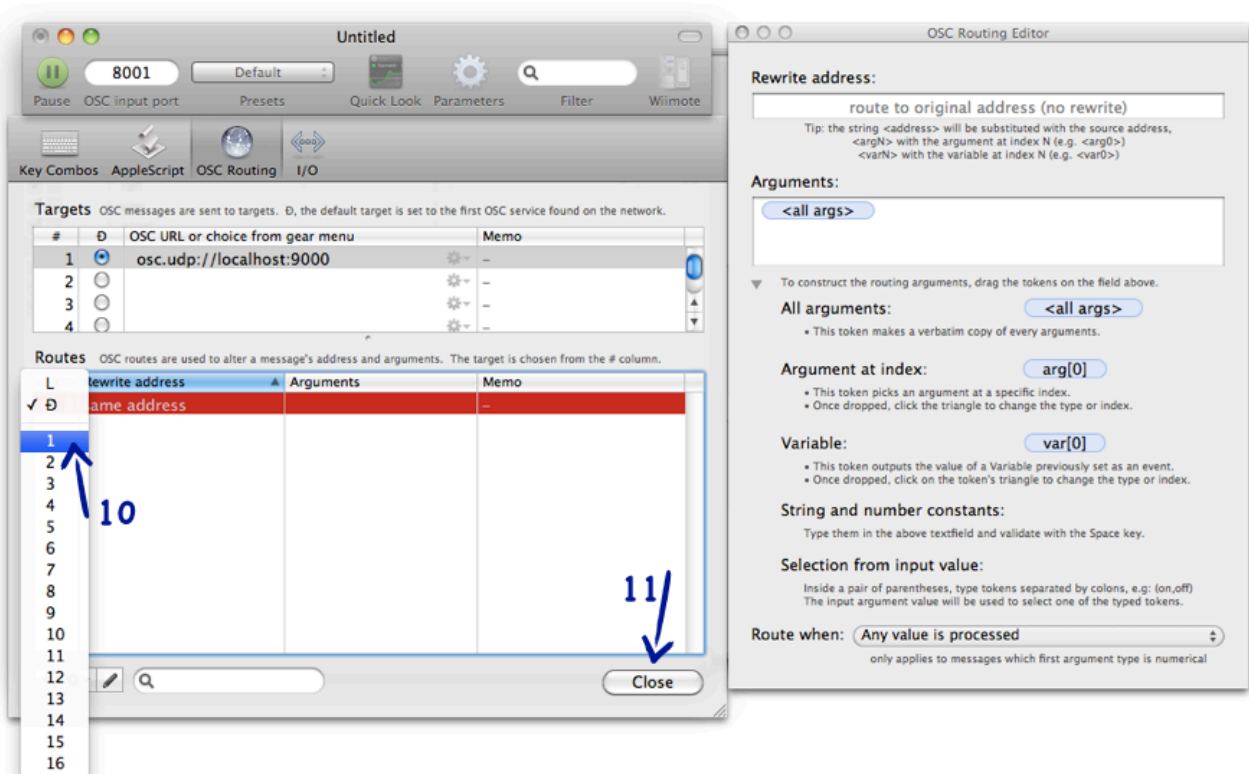
Please follow the steps indicated in the screenshots.

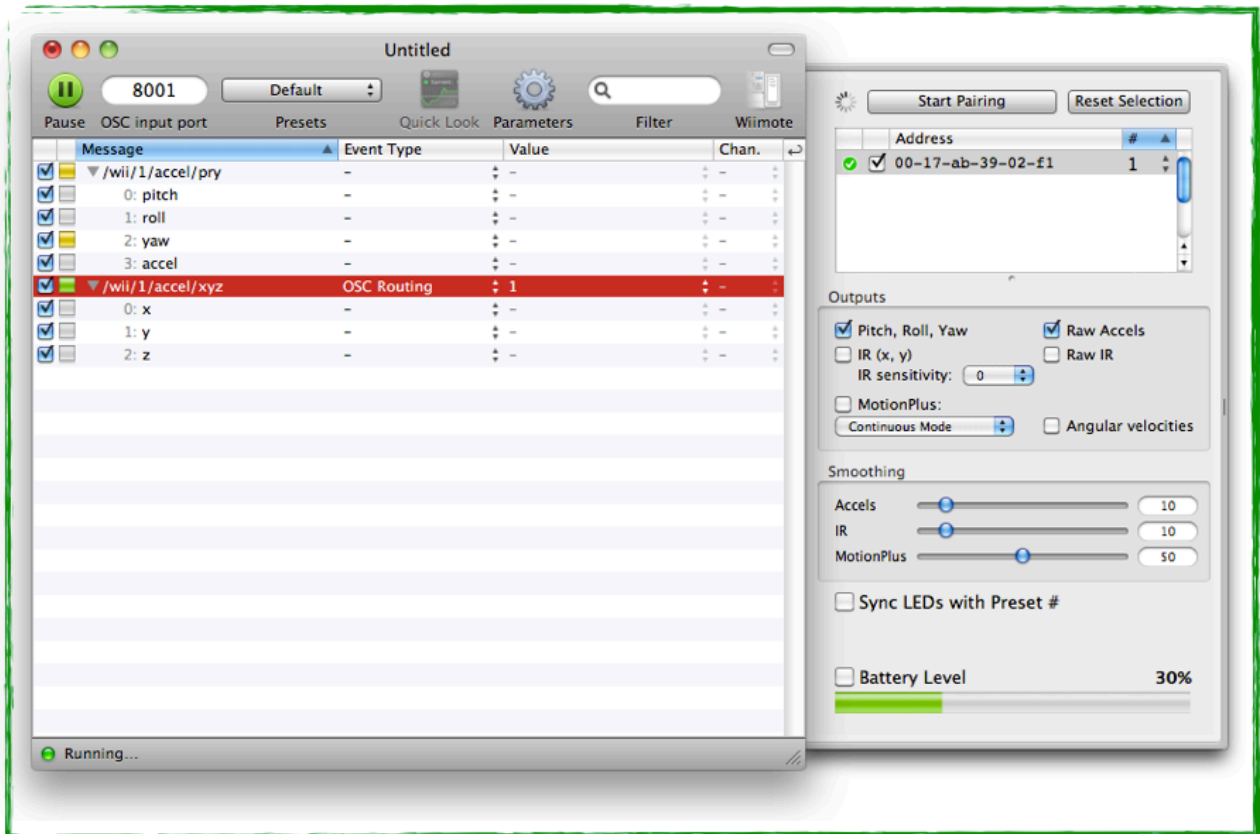






9000 is randomly chosen as OSC port - other port numbers are possible as well (for more information see opensoundcontrol.com). Use the same port if connecting more than one Wiimote.

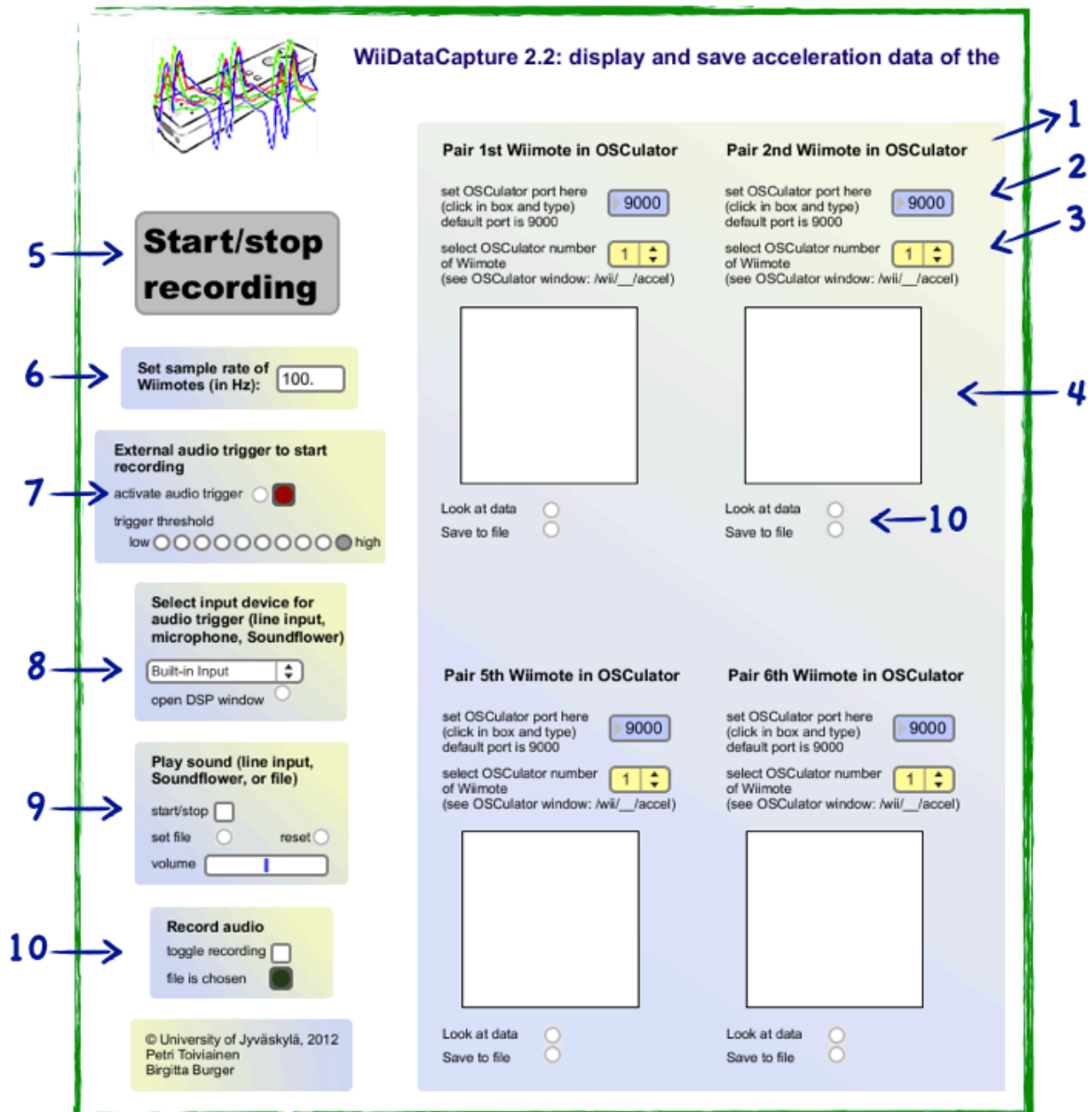




Repeat this procedure in case you want to connect more Wiimotes.



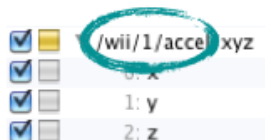
# WiiDataCapture



1. See description above.

2. The default OSC port is set to 9000. If you use 9000 in OSCulator, then you don't have to change anything here.

3. See Osculator:



and set the number of the Wiimote accordingly (click the 1 again, if data for Wiimote 1 is not streamed automatically).

4. After pairing, that window shows the acceleration data of the Wiimote motion.



You can pair up to eight Wiimotes (at least in theory...). Just repeat steps 1 to 3 to connect more Wiimotes.

## **Recording**

Recording can either be started by pressing the “Start/stop recording” button (5) or using an audio trigger (7) (either via line input (8) or played from the computer (9)).

5. Recording can be started by pressing the “Start/stop recording” button. This will “just” record - i.e., without synchronization to a sound input.  
If you want to not only record the Wiimote motion, but also an audio signal synchronized to the Wiimote recording, see (10) “Record audio”.
  6. The default sample rate of the Wiimote recording is set to 100 Hz (i.e., 100 samples per second). Change this value if needed.
  7. Click the button to activate the audio trigger. The LED starts flashing. It stays activated, so for deactivating press the button again. As trigger, you can use a signal via the line input or the microphone input (8) or a file stored on your computer (9). Adjust the “trigger threshold” if your trigger is not recognized properly by decreasing the threshold from “high” to “low” until the trigger works properly. To fine-tune the line input trigger threshold, you can adjust the volume of you line in device and/or of your computer, and to fine-tune the microphone input, you can adjust the input volume of your computer (System Preferences).
  8. You can use audio that is fed in via the line input, e.g., from an MP3 player, via a microphone (e.g., the internal microphone of your computer), or via Soundflower<sup>1</sup>. Select the desired input from the pop-up menu. If you encounter problems (i.e., not find the desired input, input does not work), click on “open DSP window” to check the options there.
  9. You can play sound, either from the line input, from Soundflower, or from an audio file that is stored on your computer. In case of playing back a audio file, select it by pressing the “open file” button. If you would like to use another input source (such as audio from the line input) after using an audio file, press “reset” to switch sound sources. Press the “start/stop” button to start respectively stop the audio playback. To make the sound audible, adjust the volume slider to a comfortable value (you can also adjust the volume settings of your computer). If the audio trigger is activated (6), the trigger waits until the signal reaches the threshold to start recording.
- Note (for 8 and 9): If you don’t activate the audio trigger, you can play back the audio without starting the recording (e.g., if you want to test your audio, or if you do not need to synchronize audio and wii movement while recording).
10. If you want to record audio synchronized with the Wiimote motion, click the button “toggle recording”. When pressing the “Start/stop recording” button (5), you are now asked to create/select a file, to which you want to record. The recording of the Wiimotes

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<sup>1</sup> <http://cycling74.com/soundflower-landing-page/> (free software to route audio between different applications)  
If you use Soundflower, you need to select it in the *System Preferences* → *Audio* → *Output* in order to route it to WiiDataCapture (you should not hear anything unless you press the “start/stop” button)

starts immediately after you have specified the file. The green LED keeps being activated until the recordings is stopped by pressing the “Start/stop recording” button.

11. After recording, you can display the data as text and/or save it to a file. Make sure to append .wii as file ending if you want to use the Matlab MoCap Toolbox. If you forgot, you can edit the file name manually in Finder. Starting a new recording will always overwrite the previous recording, so make sure to always save your data to a file.

**Happy Wii-ing!**