GET STARTED: Install, wear and make some noise. v.1.3

CC Licensed by Marco Donnarumma
(see bottom page for license details)
m@marcodonnarumma.com
http://marcodonnarumma.com

In this tutorial it is assumed that you have installed a working version of Pd-extended 0.42.5 or newer. If you have not, first download Pd-extended from the official download page.

SETUP

1. Get an Xth Sense sensor and a TRS Jack cable 1/4

2. Download the latest version of the software, and the needed libraries from http://res.marcodonnarumma.com/projects/xth-sense#download

3. Install everything:

- LINUX
Unzip the file "xth-sense-lib.tar.gz" | Move the whole folder "xth-sense-lib" into `/home/username/pd-externals/`.
Unzip the "Xth-Sense_additional-libs_LINUX.tar.gz" | Move the folders "iemguts" e "soundhack" in `/home/username/pd-externals/`.
Unzip the file "Xth-Sense.tar.gz" | Move the "Xth-Sense" folder (which contain the main software you will use), in the location you wish. Just make sure that there are no whitespaces in the path leading to it.

- MacOSX
Unzip the file "xth-sense-lib.zip" | Move the whole folder "xth-sense-lib" into `/home/username/Library/Pd/` .
Unzip the "Xth-Sense_additional-libs_MacOSX.zip" | Move the folders "iemguts" e "soundhack" in `/home/username/Library/Pd/` .
Unzip the file "Xth-Sense.zip" | Move the "Xth-Sense" folder (which contain the main software you will use), in the location you wish. Just make sure that there are no whitespaces in the path leading to it.

4. Open the sensor box. Insert the battery in the holder, and close the box again.

5. Wear the bracelet. You want to wear it where the shape of a muscle changes clearly when you make a contraction. You will have to find the right place.
The bracelet has to be enough tight not to move, but not too tight to hurt you.
If it's too tight, the muscle doesn't have room to contract properly.
Be careful; the sensor is fairly sturdy, but it can break with a careless behaviour.

6. Connect the output of the sensor box to the input #1 of your soundcard with a Jack cable.

At this point, make some contractions. The sound of your muscle should be displayed by the meter on your soundcard. Set the input gain at a half way, so that the muscle sound is loud enough, but it is not clipping.

7. Locate the file Xth-Sense.pd
Double click it to launch it. The patch will pop up.

8. In the Pd menu bar, click on "Media" and turn the Pd audio ON.

9. In the same menu bar, click on "Test Audio and MIDI". Use this patch to make sure sound is coming in and out of Pd.

10. Now, in the XS software click on "Deck" to visualize another part of the software. At the bottom right of the Deck, there is the Analysis Module (with 5 sliders, and a red graph). There is a button that reads "Audio.OFF". Click it to turn it ON. Click also the grey toggle in the red graph, to activate the visualization of the muscle sound.

Make some more contraction and see your muscle sound being visualized in the red graph!

MAKE SOME NOISE!

Now that the system is up and running, we will make some sound.

1. The upper part of the Deck is called a Workspace. This is where you can create your DSP chains by adding effects, etc.
Select the Workspace #1 by clicking the first big circular button at the top right.
Click the top right rectangular button "edit" to edit the Workspace that pops up.

2. Use the keyboard shortcut ctl+1 to create a new object in the Workspace.
When you see the blue dotted box, type in it `mix.set.in~ 1`.
Click on the grey canvas to create the object. This object receives the muscle sound from the sensor #1, and feeds it to the XS software.

3. Using the same procedure of above, place your mouse below the previous object and create another object called `efx.pshift.ssb~ 80`. This is an effect that transpose the muscle sounds to an higher frequency, so that it can be heard. The argument "80", stands for 80Hz which is the transposition frequency. This can be set to any frequency.

4. Below this effect, create another object called `mix.set.ch~ one.`
   This object dispatch the audio signal from the Workspace to the Mixer (at the bottom of the Deck). The argument "one" means it will send audio to the channel #1 in the Mixer.

5. Now connect the three objects in the order you created them. The outlet of `mix.set.in~ 1` to the inlet of `efx.pshift.ssb~ 80,` and the outlet of `efx.pshift.ssb~ 80` to the inlet of `mix.set.ch~ one.`

6. Once the objects are connected, close the Workspace (ctl+W).
   At the bottom of the Deck there is a Mixer. Slide up the volume of the first fader from the left (that is the Main Out), and the volume of the second fader (that is the channel #1).

7. Now if you try out some gesture you will hear the sound of your muscles!

   Be aware that the speakers of your laptop are not capable of reproducing these kind of sounds. Use some loudspeakers, studio monitors, or good headphones.