

Disclaimer: The MINDARMTHING system currently only works in a Linux environment and makes use of the open-source scripting language and interpreter Octave with the signal processing toolkit installed. Attempting to install the MINDARMTHING software on another operating system will cause errors and prevent the system from working. While it is possible to run Octave scripts on Matlab, there is no guarantee that they are universally compatible. However, with slight modification found on the emokit website, the MINDARMTHING can be run on a Macintosh machine. Currently there is no support for running the MINDARMTHING from a windows machine. All instructions henceforth assume a linux OS.

Downloading Linux:

The MINDARMTHING was originally created on the Linux Mint OS v12 “Lisa” but should be compatible with other linux distributions. Linux Mint can be downloaded from <http://www.linuxmint.com/> and can be either fully installed or installed side-by-side with another OS for dual-booting purposes. Please download the most stable, recent version available.

Downloading Octave:

Once linux is downloaded and fully installed, the next step is to download and install octave and the octave signal processing toolkit. To do so, open a terminal and type: “sudo apt-get install octave” which will begin the download process. Once everything is acquired, run the command: “sudo apt-get install octave-signal”, which will install the signal processing toolkit for octave.

Installing the required packages:

In the InstallationFiles folder there should be four zipped folders: the emokit, CMake, libusb, and libmcrpyt. Extract and install the emokit last (this makes compilation easier), but the order of installing CMake, libusb, and libmcrpyt do not matter. For those three programs, follow the directions found in their respective README files on how to install (usually a case of make install-> make).

Once done, extract the emokit and navigate to the emokit’s ‘c’ directory. Once there, type “cmake .” to create the necessary Makefiles. Then replace the c/examples/epocd/epocd.c file present with the one in the MINDARMTHING’s NecessaryFiles folder. Then place the files in the NecessaryFiles/AcquisitionFiles folder in the emokit’s c/bin directory as well as making a folder named “AcquisitionData” in the c/bin directory. Return to the ‘c’ directory, then type ‘make.’ This should compile all of the pieces

Running the software

Once all of the above steps have been completed, since open a terminal, navigate to the emokit’s c/bin directory, and type “octave” to bring up an octave terminal. Then type Epoc_Acquisition to begin the process.

To view the graphs of the data, in an octave terminal type “PostProcess”.

Troubleshooting

- The cord to the microcontroller package is plugged in before the cord to the headset's usb device, otherwise the software won't be able to send the data correctly.
- The headset must be fully charged and turned on with the sensors placed correctly for the system to work properly. If you are getting faulty results, check the placement of the sensors against the provided diagram.
- A saline solution is provided for wetting the sensors. To ensure proper data acquisition, ensure the sensors are sufficiently moist.