

# How to set and install an audiomoth

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# Required material

- Make sure that you inserted a microSD card that is at least 32 Go (16 Go may not last for a full night in case of high activity). The constructor recommends SanDisk cards with a writing speed class UHS-I U3 minimum, but UHS-I U1 (PNY brand) used with Audiomoths and firmware >1.2 *seem* to function correctly. It is recommended to format the card in FAT32 on your computer (once the card is inserted, right-click on the place of your card and choose Format...)
- Make sure that your batteries have a sufficient charge. Beware of rechargeable batteries a little bit too old, because some Audiomoths experienced a short-circuit.
- You can verify the charge of the batteries by connecting your Audiomoth to your computer (see hereafter)

# Update your Audiomoth

IMPORTANT but to only do once: **flashing your Audiomoth** (=update the firmware)

A specific software is required : Audiomoth Flash App [to download here](#) (different from the Audiomoth Configuration App that you will use at each deployment, see hereafter)

## AudioMoth Flash App

The AudioMoth Flash App is used to easily flash your AudioMoth with new firmware. Keep your AudioMoth up to date by downloading and applying firmware through this app.

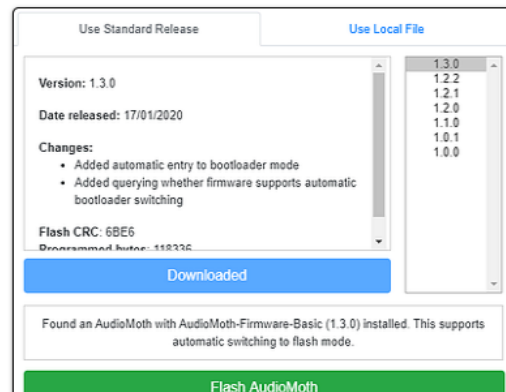
It can also be used to flash devices with your own custom firmware.

Download:

Current version: 1.3.0

macOS

Windows

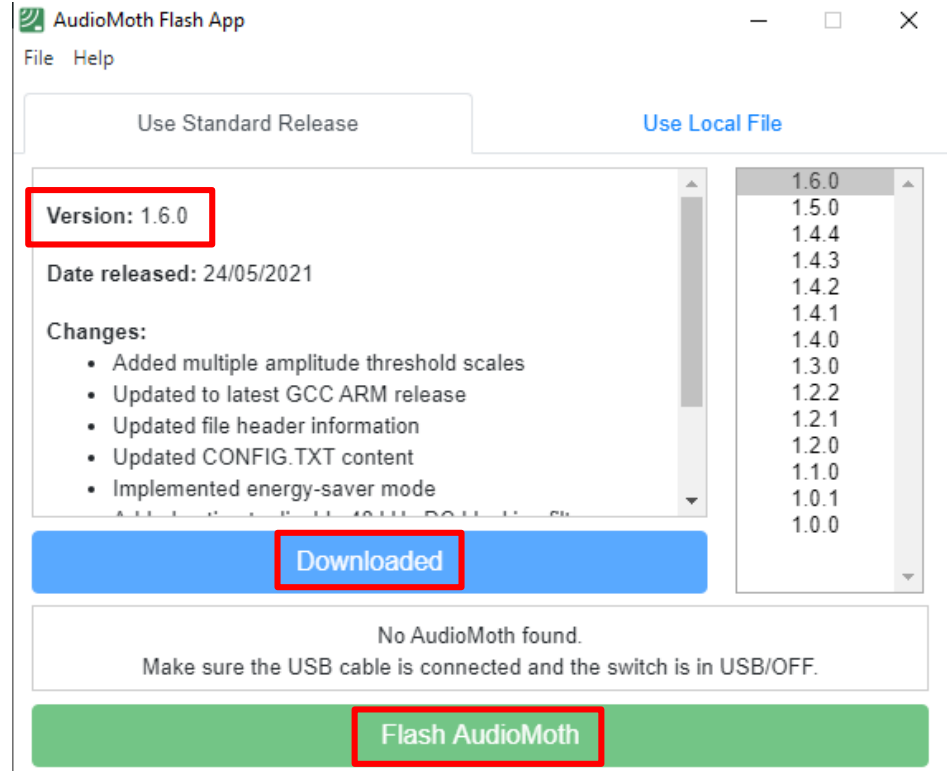


# Update your Audiomoth

IMPORTANT but to only do once:  
**flashing your Audiomoth** (=update the firmware)

It is important to download the latest version ( $\geq 1.6$ ) to benefit from the trigger function, which allows to save a lot of space on the memory card

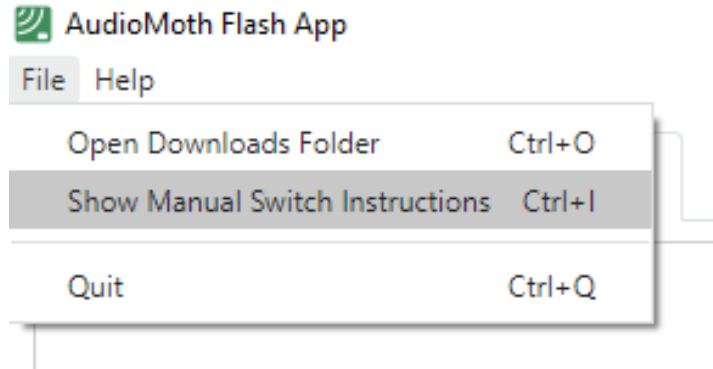
Once downloaded, click at the bottom on **Flash Audiomoth**



# Update your Audiomoth

IMPORTANT but to only do once: flashing your Audiomoth (=update the firmware)

If your Audiomoth has an old firmware (< 1.3), you will need to **use a metal object such as a paper clip to make an electronic contact** that will allow the flashing. For this, follow exactly the instructions given when clicking on File and then on Show Manual Switch Instructions



# Set the Audiomoth before field work

If it is not already done, [download and install the Configuration app of the Audiomoth by clicking here](https://www.openacousticdevices.info/config)

<https://www.openacousticdevices.info/config>

stic Devices

AudioMoth

Support Forum

The AudioMoth Configuration App is an easy to use tool for customising your AudioMoth devices.

Using it you can schedule recording periods, customise recording gain and sample rates as well as calculate approximate device lifespans given a configuration.

For usage instructions, click [here](#).

Download:

Current version: [1.2.2](#)

macOS

Windows

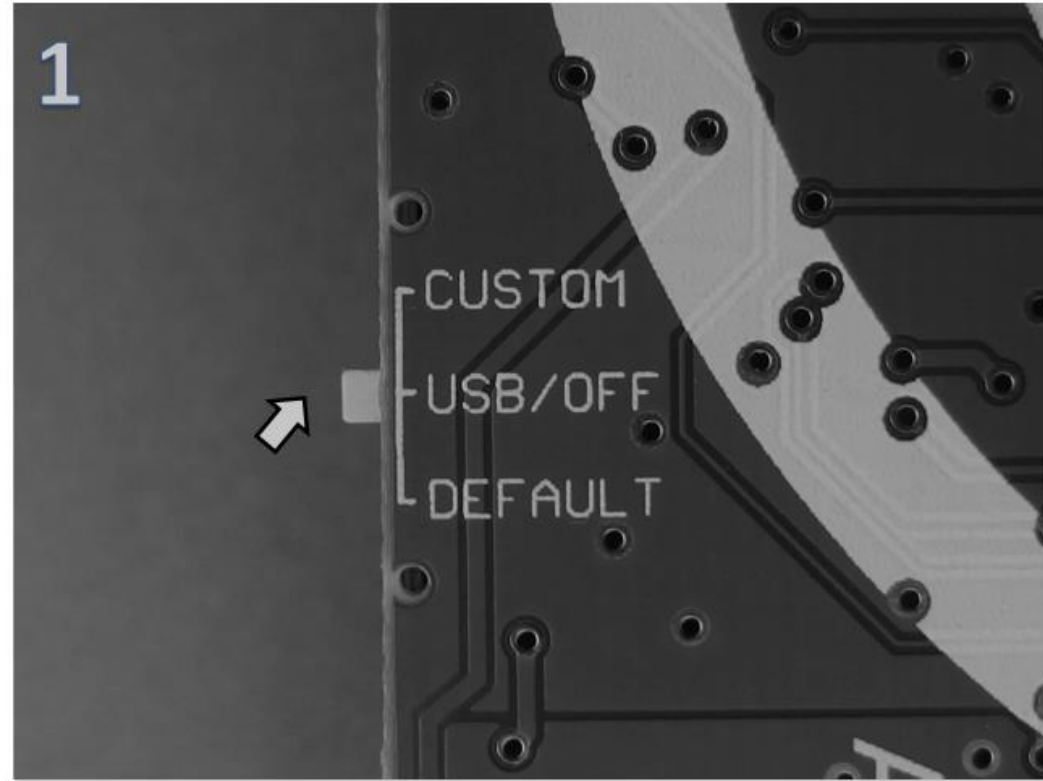
64-bit Linux

The screenshot shows the AudioMoth Configuration App interface. At the top, it displays the time and date: 13:54:28 26/09/2018 UTC. Below this, the device ID is 2453AC045A34A93E, the firmware version is 1.2.0, and the battery level is < 3.6V. A recording schedule is shown as a horizontal bar with red segments indicating recording periods. The start recording time is 7:00 and the end recording time is 16:30. A dropdown menu shows the selected period: 07:00 - 16:30 (UTC). There are buttons for 'Add recording period', 'Remove selected period', and 'Clear all periods'. Below the schedule, the sample rate is set to 48 kHz, and the gain is set to Med. The sleep duration is 5 seconds, and the recording duration is 10 seconds.

Sample rate (kHz)	Gain	Sleep duration (s)	Recording duration (s)
8	Low	5	10
16	Med		
32	High		
48			
96			
192			
256			
384			

# Set the Audiomoth before field work

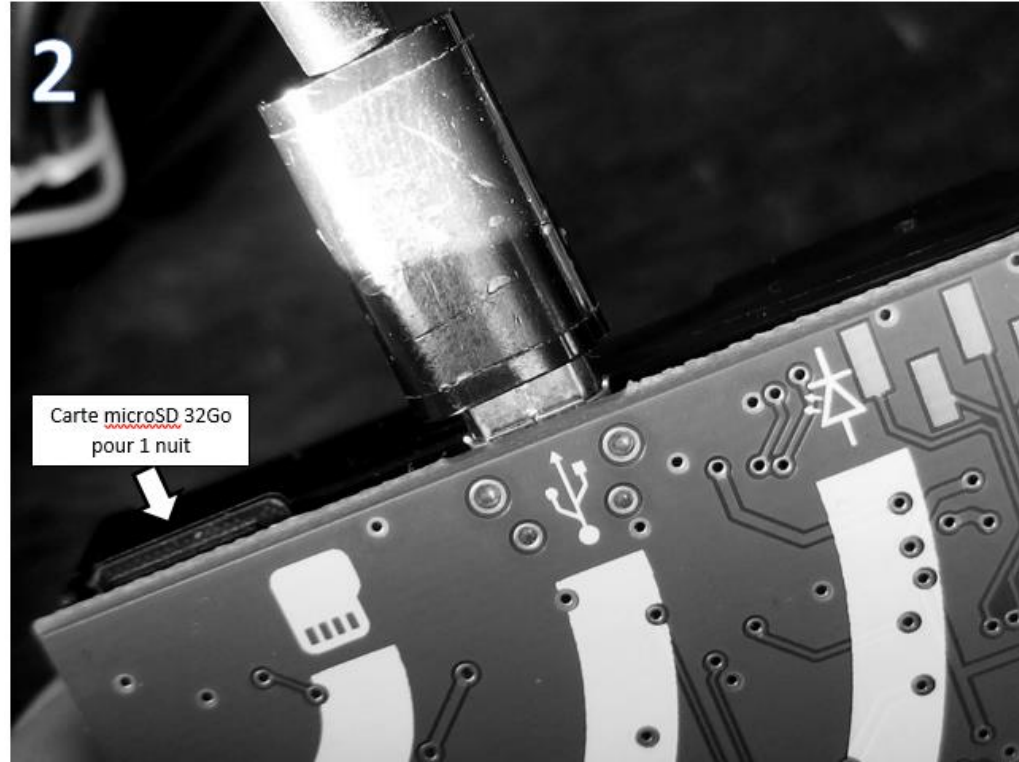
Set the switch on USB/OFF to connect it to your computer



# Set the Audiomoth before field work

Insert batteries

Connect your Audiomoth to your computer using the USB cable provided





# Set the Audiomoth before field work

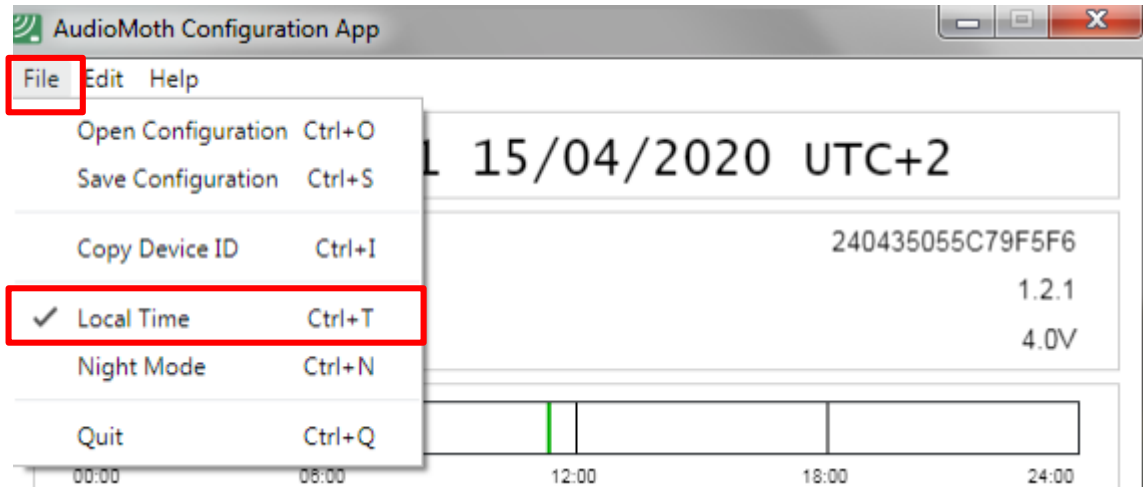
Connect your Audiomoth to your computer using the USB cable provided



# Set the Audiomoth before field work

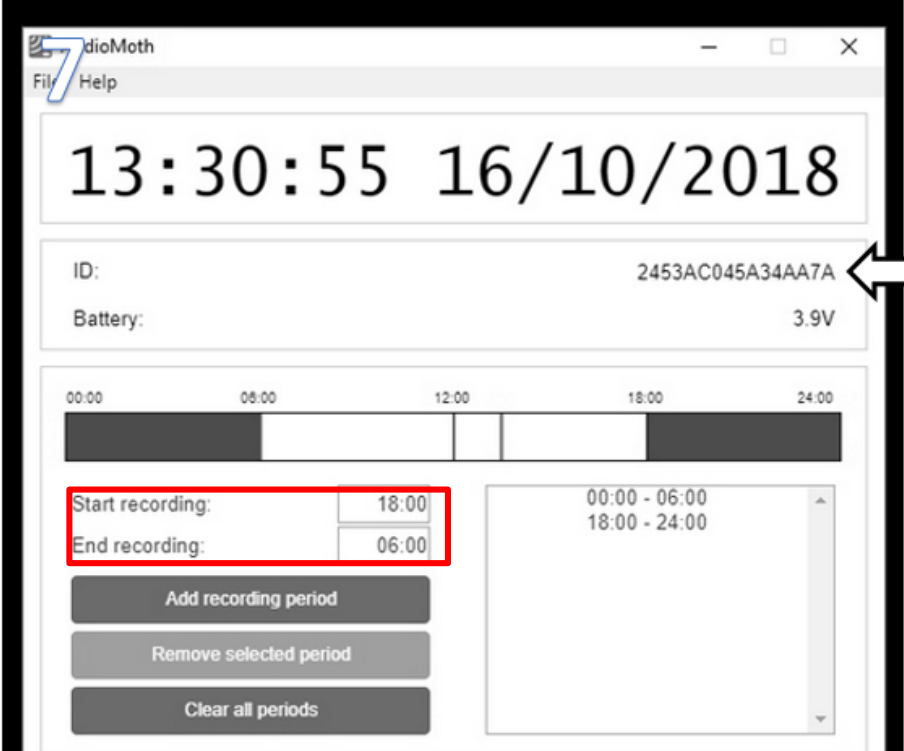
Step 1 : you need to set the time in local time. For this, click on **File** and make sure that **Local Time** is checked.

If necessary, click on the Configure Audiomoth button to validate the time.



# Set the Audiomoth before field work

Step 2 : Copy the identification number of your Audiomoth so that you can use it on the online portal of Vigie-Chiro



The screenshot shows the Audiomoth software interface. At the top, the title bar reads "Audiomoth" with a blue "7" icon. Below the title bar, there is a menu bar with "File" and "Help". The main display area shows the time "13:30:55" and the date "16/10/2018". Below this, the "ID:" field displays "2453AC045A34AA7A", and the "Battery:" field displays "3.9V". A red box highlights the "Start recording:" and "End recording:" fields, which are set to "18:00" and "06:00" respectively. Below these fields are three buttons: "Add recording period", "Remove selected period", and "Clear all periods". To the right of the interface, an arrow points to the ID field with the text "ID of the Audiomoth".

Field	Value
ID:	2453AC045A34AA7A
Battery:	3.9V
Start recording:	18:00
End recording:	06:00

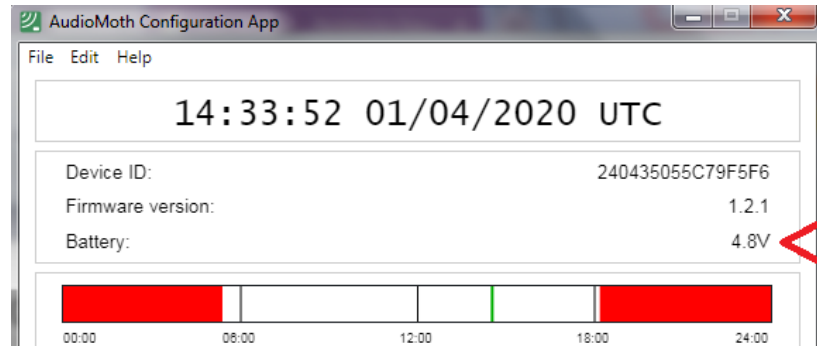
ID of the  
Audiomoth

# Set the Audiomoth before field work

Here, you can check the charge of the batteries

A charge of 4,8V corresponds to new alkaline batteries, rather 4,3 V rechargeable batteries with a mean capacity (2100 mAh)

A charge of 4,0 V seems to be the limit to last 1 full night.



New LR6  
alkaline  
batteries  
4.1V lasts 1  
night max

# Set the Audiomoth before field work

## Step 3 : Recording settings

Set the sample rate, the gain and the duration of files as follows :

The recording must be continuous so ***Sleep Duration*** must be 0. A warning will tell you that this setting is problematic but you can ignore it!

The screenshot displays the Audiomoth configuration interface with four tabs: Recording, Schedule, Filtering, and Advanced. The Recording tab is selected and highlighted with a red box. Within this tab, several settings are configured and highlighted with red boxes: the Sample rate (kHz) is set to 250; the Gain is set to Low; the Sleep duration (s) is set to 0; the Recording duration (s) is set to 300; and three checkboxes (Enable LED, Enable low-voltage cut-off, and Enable battery level indication) are all checked.

	8	16	32	48	96	192	250	384
Sample rate (kHz):	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
Gain:				Low <input type="radio"/>	<input checked="" type="radio"/>	Med <input type="radio"/>	<input type="radio"/>	High <input type="radio"/>
Enable sleep/record cyclic recording:							<input checked="" type="checkbox"/>	
Sleep duration (s):							<input type="text" value="0"/>	
Recording duration (s):							<input type="text" value="300"/>	
Enable LED:							<input checked="" type="checkbox"/>	
Enable low-voltage cut-off:							<input checked="" type="checkbox"/>	
Enable battery level indication:							<input checked="" type="checkbox"/>	

# Set the Audiomoth before field work

## Etape 4 : Schedule settings

Manually define the hours of start and end of recording. The Audiomoth does not calculate the time of sunset and sunrise, so you must manually choose a starting time (***Start recording***) that is before sunset and an ending time (***End recording***) that is after sunrise.

We recommend starting 30 before sunset and ending 30 min after sunrise.

To validate, click on [“add recording period”](#).

The screenshot shows the 'Schedule' tab of the Audiomoth configuration interface. At the top, there are four tabs: 'Recording' (highlighted in blue), 'Schedule', 'Filtering', and 'Advanced'. Below the tabs is a 24-hour timeline from 00:00 to 24:00. The timeline has a red bar from 00:00 to 06:00 and another red bar from 21:30 to 24:00, with a green vertical line at 18:00. Below the timeline, there are two input fields: 'Start recording:' with a value of 21:30 and 'End recording:' with a value of 06:30. These fields are enclosed in a red rectangular box. Below the input fields are three buttons: 'Add recording period' (blue), 'Remove selected period' (light blue), and 'Clear all periods' (blue). To the right of the input fields, there is a list of recording periods: '00:00 - 06:30 (UTC)' and '21:30 - 24:00 (UTC)', with a scroll bar on the right.

# Set the Audiomoth before field work

## Step 5 : Filtering settings

It is the famous new trigger function. This setting is very important and must be followed to ensure compatibility of your data accros space and time!

- Check Enable amplitude threshold
- And None in filter type
- Select 2 seconds
- Select a level of 1% d'amplitude threshold (the level is given below the bar)

The screenshot shows the Audiomoth configuration interface with the 'Filtering' tab selected. The settings are as follows:

- Trigger type:** Amplitude (selected)
- Filter type:** None (selected)
- Minimum trigger duration (s):** 2 (selected)
- Amplitude threshold:** 1% (selected)

Each day this will produce 0 files, totalling 0 MB.  
Daily energy consumption will be approximately 0 mAh.

Configure AudioMoth

# Set the Audiomoth before field work

## Step 5 : Filtering settings

*If you app is not up to date, the menu is different but the result is the same:*

- Check Enable amplitude threshold
- Select 2 seconds
- Select a level of 1% d'amplitude threshold (the level is given below the bar)

Recording Schedule **Filtering** Advanced

Enable filtering: ☒

Filter type: Low Band High

0kHz 125kHz

Recordings will be filtered to frequencies between 6.0 and 18.0 kHz.

Enable amplitude threshold: ☒

Minimum trigger duration (s): 0 1 **2** 5 10 15 30 60

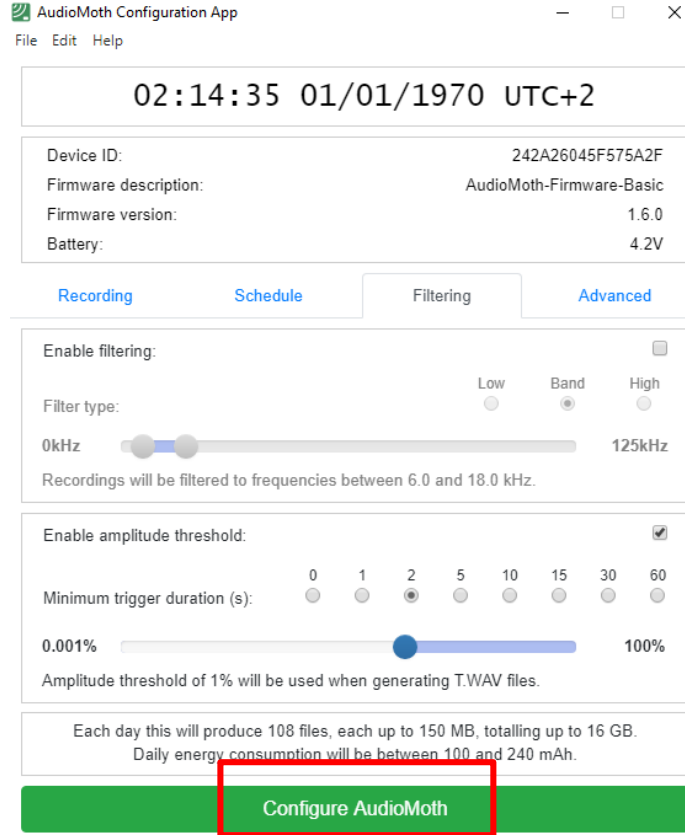
0.001% 100%

Amplitude threshold of 1% will be used when generating T.WAV files.



# Set the Audiomoth before field work

Step 6 (last one) : Click on the big green button [Configure Audiomoth](#)



The screenshot shows the 'AudioMoth Configuration App' window. At the top, it displays the time '02:14:35' and date '01/01/1970 UTC+2'. Below this, a table lists device information: Device ID (242A26045F575A2F), Firmware description (AudioMoth-Firmware-Basic), Firmware version (1.6.0), and Battery (4.2V). The 'Filtering' tab is selected, showing options to 'Enable filtering' (checked), 'Filter type' (Band), and a frequency range slider set from 6.0 kHz to 18.0 kHz. Below this, the 'Enable amplitude threshold' option is also checked, with a 'Minimum trigger duration (s)' set to 2 seconds and an 'Amplitude threshold' slider set to 1%. A note at the bottom states: 'Each day this will produce 108 files, each up to 150 MB, totalling up to 16 GB. Daily energy consumption will be between 100 and 240 mAh.' A large green button labeled 'Configure AudioMoth' is at the bottom, highlighted with a red rectangle.

AudioMoth Configuration App

File Edit Help

02:14:35 01/01/1970 UTC+2

Device ID:	242A26045F575A2F
Firmware description:	AudioMoth-Firmware-Basic
Firmware version:	1.6.0
Battery:	4.2V

Recording Schedule Filtering Advanced

Enable filtering: ☒

Filter type: Low Band High

0kHz 125kHz

Recordings will be filtered to frequencies between 6.0 and 18.0 kHz.

Enable amplitude threshold: ☒

Minimum trigger duration (s): 0 1 2 5 10 15 30 60

0.001% 100%

Amplitude threshold of 1% will be used when generating T.WAV files.

Each day this will produce 108 files, each up to 150 MB, totalling up to 16 GB.  
Daily energy consumption will be between 100 and 240 mAh.

Configure AudioMoth

# Set the Audiomoth before field work

Disconnect the Audiomoth from the computer. Set the switch on CUSTOM.

Check that the LED is clicking green.

**Do not remove the batteries, because the settings will disappear!**

# Make your Audiomoth waterproof

Required ingredients: a waterproof box and some **cellophane**  
(=plastic sheet for food)

Optional ingredients: big rubber band, tape, dessicant (silica gel)

For the waterproof box, we recommend a small junction box which costs a few euros and that you can find in hardware stores. This model particularly fits the Audiomoth:

<https://www.materielelectrique.com/boite-de-derivation-etanche-gris-ip55-60x60x40-mm-debflex-p-327285.html>

But you can also use what you have at home.

For information, Audiomoths measure 58 x 48 x 20 mm.



# Make your Audiomoth waterproof

Make a small incision on the plastic cover so that the microphone fits just below this place.



# Make your Audiomoth waterproof

If possible, tape the batteries so that they cannot jump out.

DO NOT COVER THE MICROPHONE WITH THE TAPE !! ; )



# Make your Audiomoth waterproof

Cut a band of cellophane of about twice the width of the Audiomoth



# Make your Audiomoth waterproof

Position the Audiomoth below the centre of the piece of cellophane





# Make your Audiomoth waterproof

To ensure tension, it is better to twist what is left of the cellophane back





# Make your Audiomoth waterproof

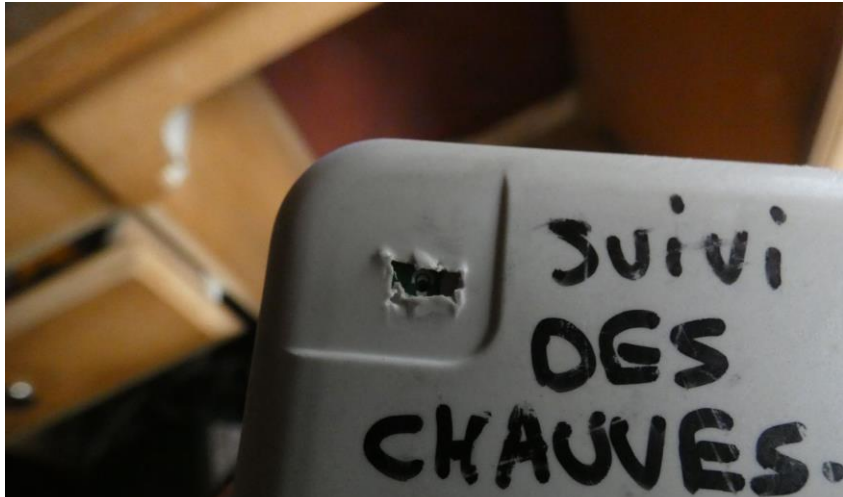
Pull the cellophane back so that it is stretched and not crumpled, particularly where the microphone is placed.



# Make your Audiomoth waterproof

Put the Audiomoth against the cover with the microphone well in front of the hole

Make sure that your Audiomoth does not move after you close the cover



# Make your Audiomoth waterproof

Here is another example for a different box. You can use foam to make the Audiomoth fit perfectly and you can paint it for camouflage.



# Make your Audiomoth waterproof

Close the cover

**You can now put it on the field!**

Do not hesitate to use iron wire, tape or a big rubber band to put it on a stick or on the branch of a tree.

Usually, the more information you write on the box (purpose and telephone number), the lower the probability is for it to be stolen.

**If you expect rain, put it with the microphone toward the horizont or a little bit toward the ground.**