

Axivity AX3

The Axivity AX3 wristband measures acceleration along three axes. Additional information can be found on <https://axivity.com/product/ax3>. All data is stored on the device, with a storage capacity of approximately two weeks. Participants are handed four Axivity AX3 devices, labeled 1 to 4. One device should be worn at the time. The devices should be switched after two weeks of data collection.

Preparation:

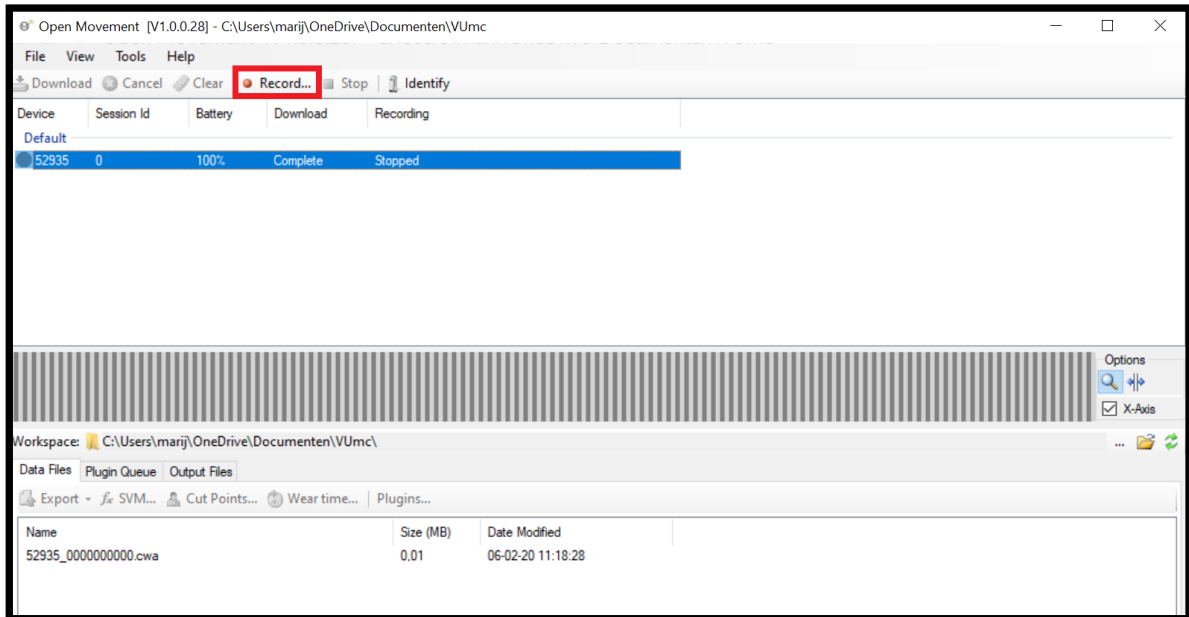
Make sure to have the Axivity AX3 software OMGUI downloaded and installed on your PC (only available for Windows OS), this should be done during the site initiation visit, otherwise please follow the instructions on <https://axivity.com/userguides/omgui/installing/>. With this software, you can configure the sensors.

1. Configure the sensors.

- a. Open the OMGUI software. The software contains of the following screens and toolbars:



- b. Connect the sensor to the computer via a USB cable. Ensure it appears in the Device Browser Pane.
- c. Click on the device in the Device Browser Pane to highlight it. If there is still data on the device, make sure to download and clear the data first (step 3 – 5). Click on the Record Interval button in the Device Toolbar.

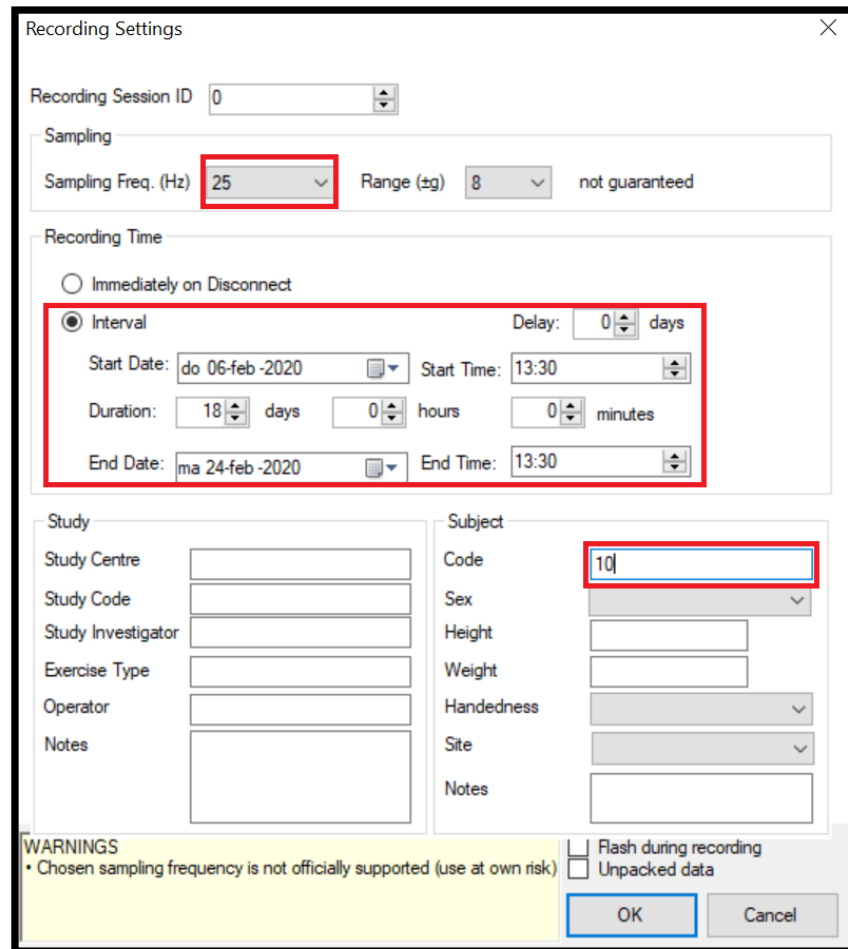


- d. A screen with Recording settings opens. Set the following settings:
- i. Change the sampling frequency to 25 Hz and leave the range as default (8g).
 - ii. For recording time, click on 'Interval'.
 - iii. The duration of the recording is 18 days for all sensors. For the 'Start Date':
 - Sensor 1: date of the baseline visit.
 - Sensor 2: date of the baseline visit + a delay of 12 days.
 - Sensor 3: date of the baseline visit + a delay of 26 days.
 - Sensor 4: date of the baseline visit + a delay of 40 days.

If you configure the sensors on the same date of the baseline visit, you have to enter the following delays and durations:

Sensor	Delay	Duration
1	0 days	18 days
2	12 days	18 days
3	26 days	18 days
4	40 days	18 days

- iv. Enter the subject code (Record ID from Redcap eCRF).
- v. The other fields may left open.



Recording Settings

Recording Session ID: 0

Sampling

Sampling Freq. (Hz): 25 Range (±g): 8 not guaranteed

Recording Time

Immediately on Disconnect

Interval Delay: 0 days

Start Date: do 06-feb-2020 Start Time: 13:30

Duration: 18 days 0 hours 0 minutes

End Date: ma 24-feb-2020 End Time: 13:30

Study

Study Centre: Study Code: Study Investigator: Exercise Type: Operator: Notes:

Subject

Code: 10 Sex: Height: Weight: Handedness: Site: Notes:

WARNINGS

- Chosen sampling frequency is not officially supported (use at own risk)

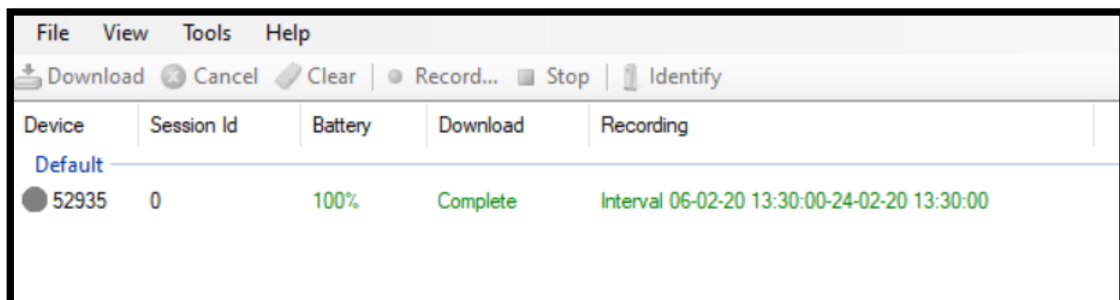
Flash during recording Unpacked data

OK Cancel

- e. Click OK to complete the configuration.
- f. Repeat these steps for the other 3 sensors.

2. Collecting data

- a. After configuration, the Device Browser Pane should look similar to this:



Device	Session Id	Battery	Download	Recording
Default				
52935	0	100%	Complete	Interval 06-02-20 13:30:00-24-02-20 13:30:00

- b. Make sure that the battery is charged to 100% before handing out the device to the participant.

c. The device is now ready to hand out to the participant.

Participant instructions:

- The Axivity AX 3 device should be worn at all times from this moment on until the close out visit. At the close-out visit, the devices will be re-collected.
- The Axivity AX 3 device should be worn at all times, and is not be removed during sleep, exercise or bathing.
- The Axivity AX 3 device should be worn on the dominant wrist.
- The Axivity AX 3 device should be switched after two weeks. The participant will be reminded of this action by phone. The device that was worn before should be placed back in the container.

Enter the following information in the eCRF after the baseline visit:

- Date of handing out Axivity AX 3 device.
- Four serial numbers of the four Axivity AX3 devices.



What do the LED lights mean?

- When connected

	LED	Notes
☀	Red rapid flash	Battery in precharge, wait up to 60 seconds.
☀	Red flash	Device in bootloader mode.
☉	Amber/white pulse	Connected to USB power. Allow up to two hours to fully charge (check software for details). Reported battery level is approximate: anything shown over 85% can be considered as a full charge.
●	Solid green/white	Connected to power, but not a computer.

- When disconnected

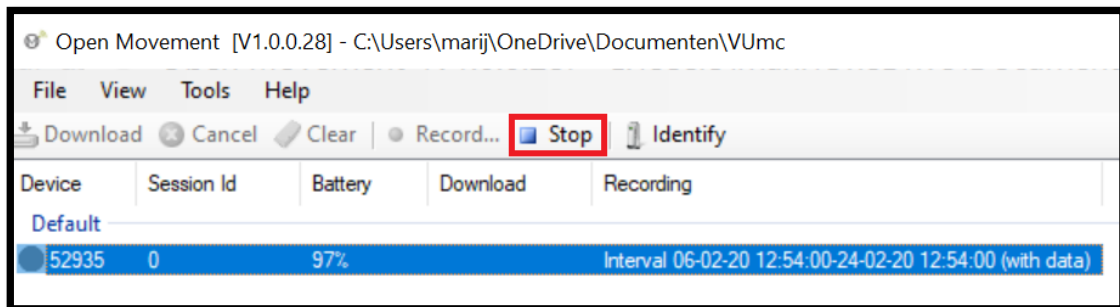
	LED	Notes
	No light	Waiting to start logging, or logging silently (default).
○	Blue very brief flash	Not configured, or successfully finished a timed recording.

○	Red very brief flash	Battery very low, or recording finished early because of low battery or storage capacity.
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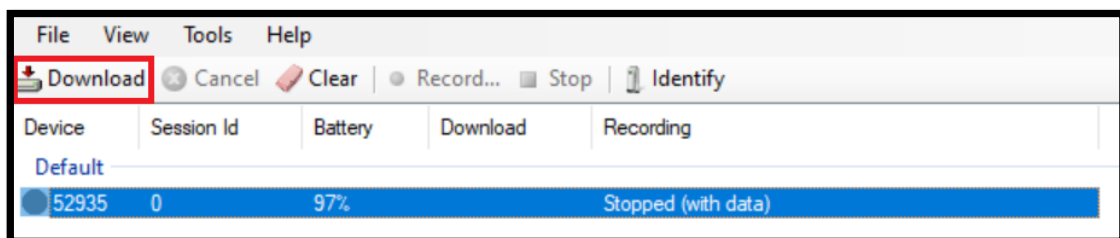
When the participant returns the Axiivity sensors during the close-out visit, the data should be downloaded from the device and uploaded to the RADAR-base platform.

3. Download the data

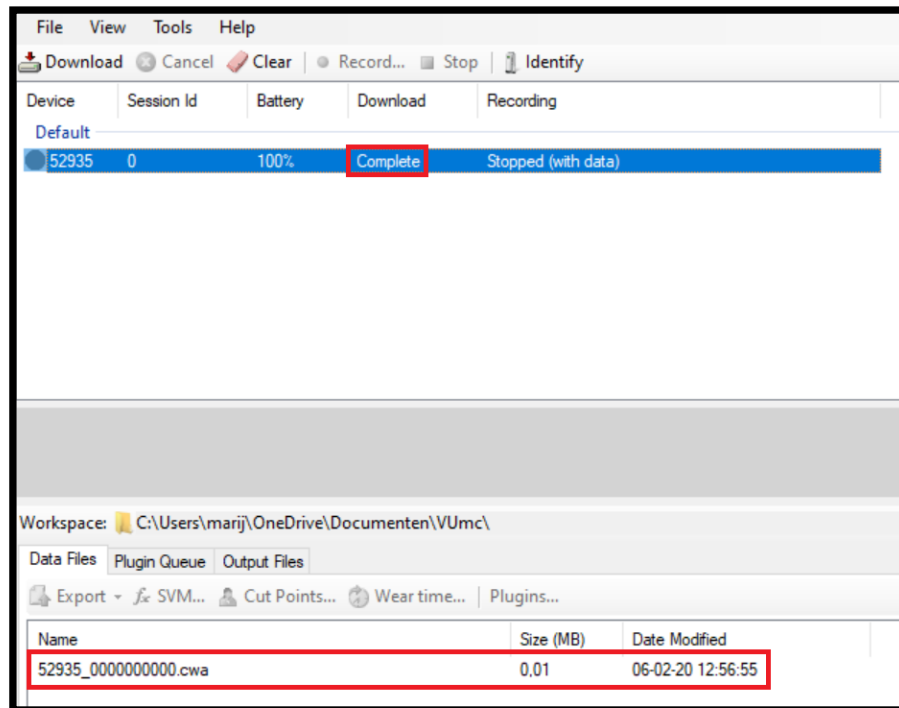
- a. Connect the device to the computer via a USB cable. Ensure it appears in the Device Browser Pane.
- b. Click on the device in the Device Browser Pane to highlight it.
- c. If the device is still configured to record on disconnect, you will first have to click the Stop button in the Device Toolbar.



- d. Click the Download button in the Device Toolbar.



- e. The file then starts to download to your working folder. Once downloaded the file will appear in the Local Files Pane and you'll see that the download is completed in your Device Browser Pane.



f. Open the folder where your file is saved. Make a zip file of your data file:

- i. Right click on your file
- ii. Copy to: compressed (zip) file

Make sure that the zip file is created on a Windows PC or laptop, a Mac top will give failures during the data upload.

g. Rename zip file as follows: [Study ID]_Axivity_[sensor number], where:

- i. Study ID: record ID, copy from RedCap eCRF or keyfile.
- ii. Sensor number: 1, 2, 3 or 4

h. Repeat these steps for the other 3 sensors.

4. Upload the data to RADAR-base platform

- a. Go to <https://radarbase.bmrc.ox.ac.uk/upload/>