RAVE ALTIMETER
User Manual

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Axelo Technologies SRL

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WARNING: SKYDIVING IS A SPORT WITH HIGH HAZARDOUS RISK. IT CAN RESULT IN VERY SERIOUS INJURY OR DEATH.
The purchased altimeter is a device potentially subjected to malfunctioning, as all other electrical equipment are, regardless of being properly designed, built and maintained. Your altimeter's solely purpose is to provide an aid when checking your altitude. IT IS NOT AN ACTIVE SAFETY DEVICE. We highly recommend the usage of more than one such monitoring device, to mitigate the risk in case of malfunction. USE THE RAVE ALTIMETER AT YOUR OWN RISK. Do not rely your decision entirely on it, and constantly maintain visual cross reference with the ground.

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1.   Introduction

Congratulations on your decision of acquiring our product!

RAVE Altimeter information is constantly being maintained and updated. Please refer to our website, www.axelotech.com, for the latest issued documentation.

2.   Customer Support

The RAVE altimeter can be configured in many ways via its menu.

If the desired configuration cannot be reached with the support of present document, please get in contact with us at and we will do our best to support you.

We can be contacted in several ways to help you get the maximum from our product:

• through our site www.axelotech.com,

• by email at info@axelotech.com ,

We also appreciate any recommendation for improvement.

3.   Basic Operation

Navigating through the menu is easy and intuitive.

If the option **Auto-Lock** is active press the middle button 3 times to unlock the device. To enable – disable this feature, see chapter 4.3 Settings – Display.

Anywhere in the menu, access the up and down buttons to move the cursor through the options.

By pressing the middle button, the highlighted option is selected.

Your RAVE altimeter comes with a set of default parameters, please configure it before using it for skydiving activities according to your needs: language, alarm intensity, altitude trigger levels, metric vs. imperial measurement units, etc. Refer to the chapter 4. Menu for details.

IMPORTANT: If the following icon appears on the display, do not use the RAVE altimeter and contact customer support.
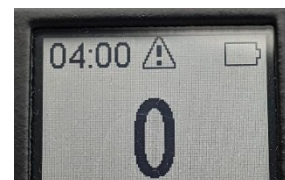
3.1 Basic Setup Procedure

The battery type LIR2450, which is fitted to your device, doesn't need to be removed or changed as it is rechargeable with the USB provided cable.

While charging the device will display the following icon
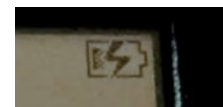
Your RAVE altimeter is always on and has a power saving mode which switches the display off after 5 minutes.

Please be sure the altimeter is charged before using it for skydiving activities.

If battery replacement is required, please contact support.

3.2 Usage Possibilities

3.2.1 Wrist Mount

RAVE altimeter can be used on your wrist, as a visual altimeter, using the wrist mount accessory provided in the default package

RAVE altimeter fits in the housing attached to the elastic fabric wrist mount.

The elastic wrist band is provided as default in 3 different sizes.

To change the elastic wrist band to a different size, remove the device from the hand mount, slide the 2 parts of the hand mount (principle shown in the first picture below), insert a different size of elastic wrist band, slide back the hand mount and then introduce the altimeter into the new assembly.

3.2.2 Helmet Mount

Rave altimeter can be mounted in the helmet for an enhanced audible guidance if the helmet is specifically designed for this.
Be sure to adjust the intensity of the alarm prior to mounting to the helmet.

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3.3 Display Screens / Modes

3.3.1 Ground mode

The ground mode displays altitude, time, battery charge status, whether the Alarms is enabled or disabled and the logbook icon (enabled/disabled).

The RAVE altimeter continues to function in battery saving mode while its display is turned OFF. It can be turned ON by pressing any of the 3 buttons.

The display automatically turns ON if a change in altitude is detected.

Pressing the "Down" button switches the display to Free Fall mode.

Pressing any of the 3 buttons reverts the screen to the Ground display.

3.3.2 Climb mode

The Climb screen shows:

- Altitude
- Climbing speed
- Status icons for Alarms, Logbook and the Battery status.
- Current time.

While in Climb Mode the settings of the device can be accessed and changed from the menu.

3.3.3 Freefall mode

Once you jump, the RAVE altimeter auto detects this and switches into Freefall mode regardless of the current display mode.

Free fall icon alarm type is displayed in the lower left corner.

In this mode the altitude is presented with large characters, in km for metric system or kft for imperial system.

The descent speed is shown m/s for metric system or ft/s for imperial system.

3.3.4 Canopy mode

When under canopy mode the display shows the altitude in meters for metric system or feet for imperial system. It also shows descent speed in m/s or ft/s.

4. Menu mode

Press the middle button to access the menu.

Scroll through the menu entries by pressing the Up or Down buttons.

Once the desired option is marked by the cursor, press the Middle Button to select.

Always revert to the previous menu by selecting "<Back" (last option on each menu page)

4.1 Alarms Menu

From the Main Menu move the cursor down to "Alarms" and press the middle button.

RAVE altimeter can handle 5 groups of alarms, each with 6 configurable altitude thresholds for the alarms (3 for freefall and 3 for canopy modes). Predefined Groups names are: AFF, Belly, Canopy Control, Tandem and Vertical Formation.
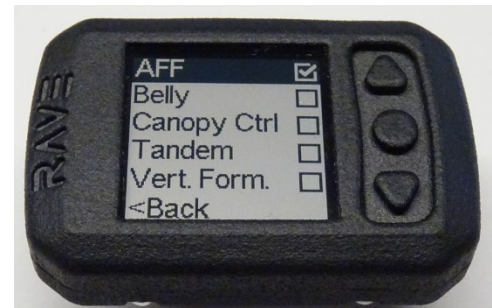
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The freefall alarms sound when the altitude is reached. The 3rd freefall alarm is a special emergency alarm: it will sound continuously if the descent speed is high (freefall speed) at the configured altitude or below, i.e. beyond the safety zone.

The canopy alarms sound prior to the configured altitude and stop when reaching it.

The names of the alarm groups can be changed using Rename Group menu.

Intensity of the alarm sound can also be configured for both free-fall and canopy. Choose between value 10 (minimum) and 100 (maximum) intensity.

Once the setting is correctly defined, according to your preference, select "Accept" to save the setting, or "Cancel" to revert to the last saved value.
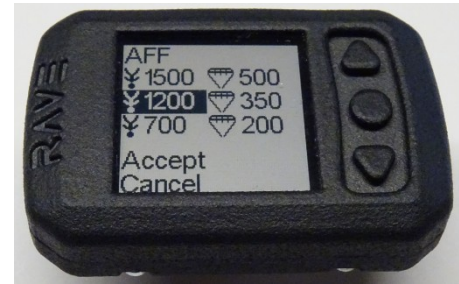
Alarm Menu Overview

level1	level2	level3	level4	Obs
Alarms	Select Group	AFF [x] Belly [ ] Canopy Ctrl. [ ] Tandem [ ] Vert. Form. [ ]		Select the active alarm group.
		<Back		
	Edit Altitudes	AFF	¥ NNNN ▽ NNN ¥ NNNN ▽ NNN ¥ NNNN ▽ NNN Accept Cancel	Edit the altitude thresholds for this alarm group
		Belly Canopy Ctrl. Tandem Vert. Form.	Same as above	Same as above
		<Back		
	Rename Group	AFF	Rename group **AFF** as **New Name** Accept Cancel	Rename the selected group
		Belly Canopy Ctrl. Tandem Vert. Form.	Same as above	Same as above
		<Back		
	Set Volume	Freefall: NN Other: NN Accept Cancel		Edit the alarm sound intensity
	<Back			

4.2   Drop Zone Menu

This section allows setting of current altitude and different drop zone offset.

Drop Zone Menu Overview

level1	level2	level3	level4	Obs
Drop Zone	Set Height	Height: NN		Edit the current altitude
		Accept		
		Cancel		
	Set DZ Offset	Offset: NN		Edit the offset between takeoff and dropzone. Note: When the offset is non-zero, the value will be shown on the Ground and Climb display modes with a special icon.
		Accept		
		Cancel		
	<Back			

Example of presetting Drop zone offset value and icon display:
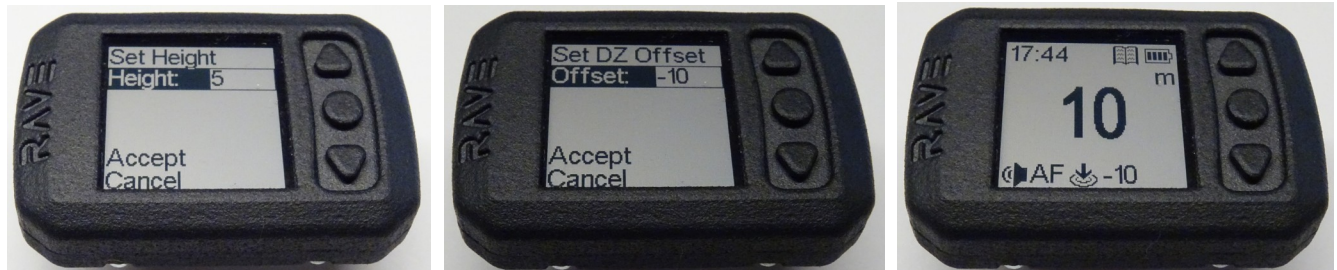
4.3   Settings Menu

From this section of the menu the customization of the RAVE altimeter is done. You can set the menu language, the measurement unit system, display settings and set the time and the date.

Languages to be chosen from are English, French, German and Spanish.

Measurement unit can be selected between Metric and Imperial system.

Display settings allow you to rotate it so the device can be used either on the left hand or on the right hand, as well as to enable/disable the Auto-Lock feature, to avoid the possibility of unintendedly pressing the buttons while using the altimeter.

Setting Menu Overview

level1	level2	level3	level4	Obs
Settings	Language	English [x] French [ ] German [ ] Spanish [ ] <Back		Select the display language
	Measurement	Metric [ ] Imperial [ ] <Back		Select the measurement system.
	Display	Flip Display [ ] Dark Mode [ ] Auto-Lock [x] <Back		Select display orientation (left hand or right usage) Select between light or dark theme Enables AutoLock (prevents accidental button pressings)
	Time & Date	Set Time	Hour: NN Minute: NN Accept Cancel	
		Set Date	Year: NNNN Month: NN Day: NN Accept Cancel	
		<Back		
	<Back			

4.4   Info Menu

This section provides manufacturing information of the product and a functional demonstration mode

Info Menu Overview

level1	level2	level3	level4	Obs
Info	Demo	Normal Demo High Speed Inc. Low Speed Inc. <Back		Simulates a normal jump with configured altitude alarms Simulates a High speed incident Simulates a Low speed incident
	Miscellaneous	Pres Pa NNNNNN ErrCode N S/N NNNN Hw ver N.N Sw ver N.N Boot ver N.N		Current athmosferic pressure Error code (0 = ok) Serial number of the device Hardware version of the device Software version of the device Boot sw version of the device
	<Back			

Demo modes are available for simulating normal/incident jumps.

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Manufacturing data such as Serial Number, software, hardware and boot versions are mentioned in this section.

In case of any issues with your RAVE device, please provide information from this section to customer support.

4.5   Log Book Menu

Your RAVE altimeter supports logging of miscellaneous details for up to 1000 jumps.

Additionally, the Global Info shows statistical data from all stored logs.

Log Book Menu Overview

level1	level2	level3	level4	Obs
Log Book	Log Active [x]			Enalbe/disable logging
	Log #NNN (last)	YYYY.MM.DD HH.MM ☃ NNNN m ¥ NNN s NNN kph ▽ NNNN m ⚓ NN m NN s AF		Up/down togles through log details - date and time of the jump - jump height, freefall maximum speed - deploy height, freefall time - canopy time - alarms group name abbreviation
	Log #NNN	Same as above		Same as above
	Select Logs	Log Offset	Log # NNN	Allows the selection of first log's number
			Accept Cancel	
		View Log	Log # NNN	Select which jump log to show
			Accept Cancel	
		Delete Log	Log # NNN	Delete a jump log
			Accept Cancel	
		Erase All Logs	Logs Cnt: NNN	Erase all jumps log information
			Accept Cancel	
		<Back		

	Global Info	Logs Cnt: NNN
		FreeFall time:
		            HH.MM.SS
		Canopy time:
		            HH.MM.SS
		Freefall speed:
		avg NNN Km/h
		max NNN Km/h
		Canopy speed:
		max NNN Km/h
				Up/down togles through log details
				- total number of jump logs
				- cummulated freefall/canopy time
				- freefal average speed over all logs
				- freefall maximum speed over all logs
				- canopy maximum speed over all logs

	<Back			

5 Specifications

RAVE Altimeter	
Body material	Thermoplastic Polymer
Battery Type	LIR2450 (rechargeable)
Alarms	5 groups with 6 altitude alarms
Max altitude	9000m (29500ft)
Temperature	-20 +60 Celsius
Weight	24g (0.85oz) - without mount
Overall dimensions	54x36x12mm (2.12x1.4x0.5in)

6 Firmware Upgrades and Download Logs

The RAVE altimeter allows you to update its firmware with the newer versions as they become available. Software updates can be downloaded from our website: www.axelotech.com.

Step1: Access the "**SUPPORT**" section from "**axelotech.com**" site.
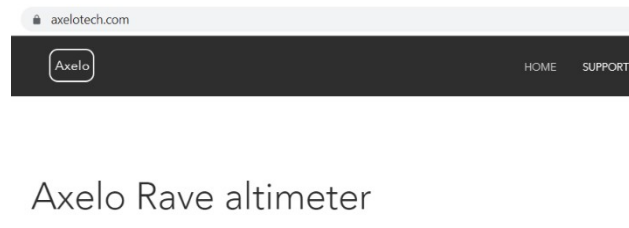
Step2: In the "**SUPPORT**" menu chose the "**DOWNLOAD SOFTWARE**" option:
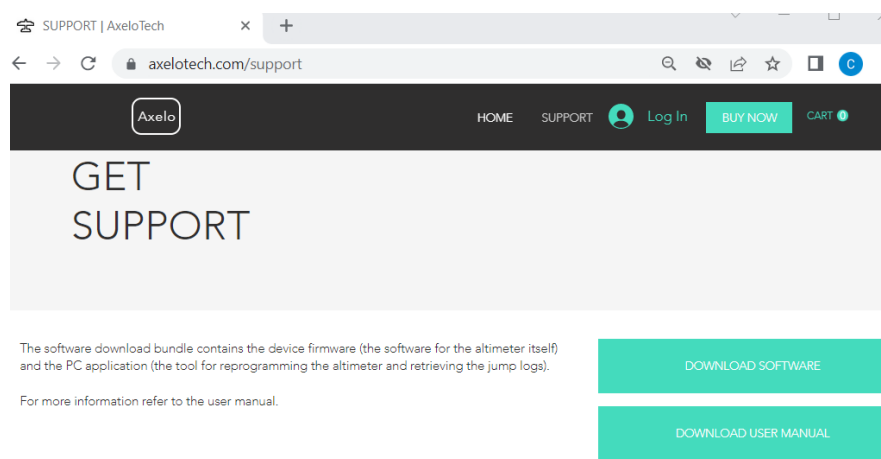
Step3: A .zip file named "**Axelo_Rave_Altimeter_Reprogramming_V3_1.zip**" is saved on your computer in the location your browser saves downloaded files.

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Unzip the file to a location chosen by you.

	Add	Extract	Test	Copy	Move	Delete	Info

C:\downloads\Axelo_Rave_Altimeter_Reprogramming_V3_1.zip\

Name	Size	Packed Size	Modified
Axelo_Rave_Altimeter_REPROGRAM_file_v3_1.hex	725 805	306 355	2023-02-04 23:16
Axelo_Reprogramming_Tool.exe	119 808	41 116	2022-10-17 09:28
Change_history.txt	903	421	2023-01-29 12:09
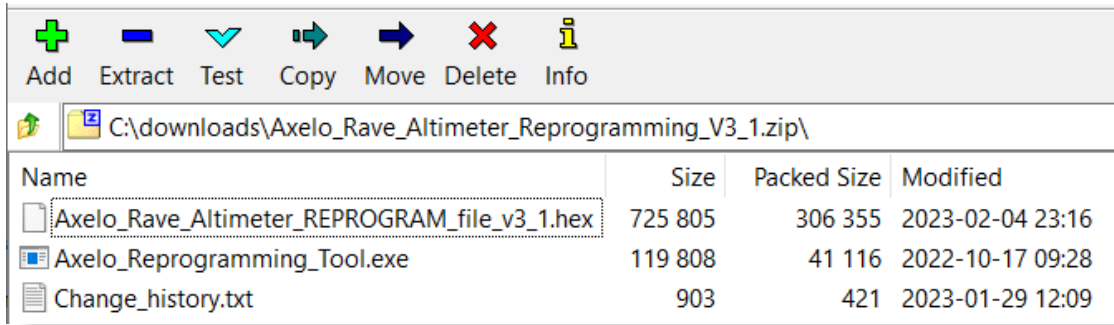
Inside the unzipped folder you will receive:
    -The reprogramming software tool: "**Axelo_Reprogramming_Tool.exe"**
    -RAVE software update: "**Axelo_Rave_Altimeter_Reprogramming_3_1.hex**"
(variant v3_0 used as example may differ).

Step4: Connect the RAVE Altimeter to your computer and then double click on
"**Axelo_Reprogramming_Tool.exe"** tool, from the location where you unzipped it.
Following window is opened:

```
Axelo Reprogramming Tool v2.1.1                    —    □    ×

   Update Firmware        Device Info        Save Logs

Device Info button pressed
Software Version   : 3.0
Hardware Version   : 2.6
Bootloader Version : 2.0
SW is running in   : Application mode
Serial Number      : 00001051
Jump logs count    : 4
Device Info button success
```

Step5: You have the option to "**Update Firmware**" and **"Save Logs"**

To update the firmware, press the corresponding button and then chose from the location
where you unzipped the package
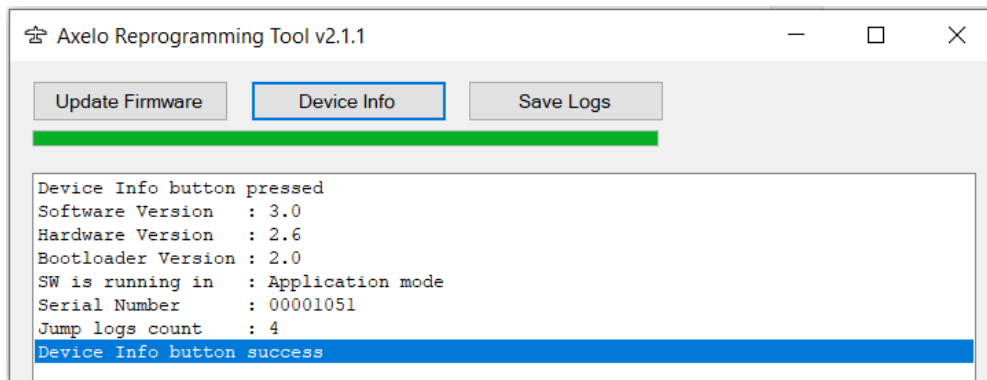"**Axelo_Rave_Altimeter_Reprogramming_3_1.hex**" file.

To download the Logs from the device, press the "Save Logs" button then chose a local
destination location on your computer.

WARNING: SKYDIV...   ...R DEATH.
The purchased alt...   ...are, regardless of
being properly des...   ...cking your altitude.
IT IS NOT AN ACTI...   ...vice, to mitigate the
risk in case of mal...   ...on it, and
constantly mainta...

```
Axelo Reprogramming Tool v2.1.1                    —    □    ×

   Update Firmware        Device Info        Save Logs

Save Logs button pressed
Logs retrieved: 1 of 4.
Logs retrieved: 2 of 4.
Logs retrieved: 3 of 4.
```

Step6: (OPTIONAL) From RAVE altimeter Info menu -> Miscellaneous (see link: 4.4. Info Menu), check that the SW version of your RAVE altimeter matches the version from the downloaded package.

7

| | Add | Extract | Test | Copy | Move | Delete | Info |

C:\downloads\Axelo_Rave_Altimeter_Reprogramming_V3_1.zip\

Name	Size	Packed Si
Axelo_Rave_Altimeter_REPROGRAM_file_v3_1.hex	725 805	306 3
Axelo_Reprogramming_Tool.exe	119 808	41 1

SW ver 3.1
HW ver 2.6
Boot ver 2.0
S/N   1051
ErrCode 0
Pres Pa 102925
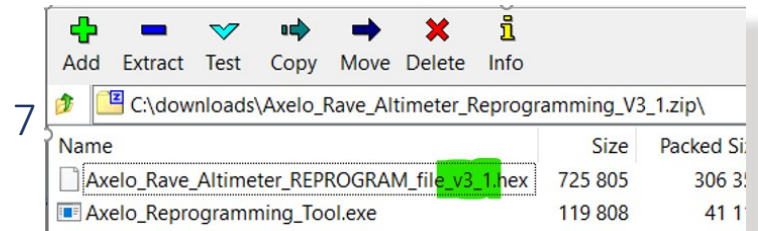
Maintenance

The RAVE altimeter shall not be disassembled by the user.

Unless specifically mentioned in this document, the maintenance on RAVE altimeter shall only be performed by Axelo Technology SRL.

Please get in contact with customer support prior to disassembling the unit.

We will offer support and advice with issues you might encounter with our product.

8 General Cleaning

Wipe clean the RAVE altimeter with a damp cloth.

Do not submerse the product in water.

Do not use any industrial detergents or solvents as they can damage the display of the RAVE Altimeter.

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9 Servicing

If you encounter an abnormal behavior, immediately discontinue using the RAVE altimeter and contact customer support.

In your inquiry message, please include your contact information (Phone Number, email address) and a brief description of the issue you encounter. Also please provide information shown in the Info->Miscellaneous menu.

10   Warranty

If the products should fail due strictly to defects in manufacturing, then Axelo Technologies will repair or replace the units or parts of it free of charge for 24 months from the date of purchase.

This warranty applies to failures due to defects in materials and workmanship that may occur during normal operations. For the purposes of this clause, "normal operations" do not include skydiving activities, according to the clause of art. 11 below.

This warranty becomes void if damage is caused by the owner or any third party, including but not limited to modifying, attempting to fix, or otherwise altering the product etc.

This warranty doesn't cover damage or failures resulting from including but not limited to accident, misuse, neglect, mishandling of the product etc.

To obtain the benefit of this warranty, deliver the complete product via prepaid transportation with a written description of the failure and the factual circumstances in which it occurred to:

Axelo Technologies S.R.L.
str. Ion Cristoreanu nr. 7, ap.2
Timișoara, TM 300323, România
email: info@axelotech.com

or to the authorized distributor upon prior acknowledgement.

11   Waiver of liability

THE BUYER AND USER OF THE PURCHASED ALTIMETER INDEMNIFY THE MANUFACTURER AND VENDOR FROM ANY LIABILITY FOR DAMAGE INCURRED BEFORE, DURING AND AFTER SKYDIVING WITH THE PRODUCT.

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12   Warning

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