GPS-Logger Software Version 0.2

This manual describes the functionality of the Aaronia GPS-Logger Software.

Please note that the software is currently still under development. It is possible that the software can crash incidental and contains some errors. We are trying to fix these issues as soon as possible.

If you have own feature request, feel free to contact us in our forum.
System Requirements

- Windows XP or higher
- Intel Core2 or AMD Athlon 64 CPU starting at 1.5 GHz or more. A Dual- or Quadcore CPU is not required, but recommended
- Minimum of 2 GB memory
- 100 MB free disk space (more when recording measurements to disk)
- Display resolution of at least 1200x800 (smaller resolutions will work, but can make the MCS unusable)
- Free USB port to connect GPS Logger device.
Hardware Overview

<TODO>: Insert description text here... And don't forget to add keyword for this topic
GPS - Indicator LED

- flashing red: No or not enough satellites found
- flashing yellow: Found enough satellites to get GPS information
- flashing green (faster): Found more satellites for higher precision in GPS information

Power LED

- black: Power is off
- green: Power is on
- flashing green / red (slow): If logger is on or off, and power is turned on, the LED indicates missing micro SD card
- flashing green / red (fast): If logger is on and power is on, and SD card is insert into micro SD card slot, the LED indicates the calibration mode.

Logger / Calibration LED

- black: Logger is off
- red or green: If power is off and usb cable is connected to the device and the pc, the LED indicates the charging state of the battery. Red, battery is charging. Green, battery is fully charged.
- red: If no USB cable is connected and the logger is on, the LED shows that the logger records data to the SD card
The logger switch has two functions. If you turn it on before you power on the device, you'll enable the calibration mode for the internal sensors. The Power LED flashes rapidly. If you turn it on when the device is already powered on, you'll activate the recording mode. The GPS/Sensor data will be written to the SD card until you turn the logger off.

Connect the device via USB cable with your PC to use the device in streaming mode with our software.

Insert the micro SD card into the slot. Please note that the device won't work without a micro SD card. Insert / press the SD card until you hear the "click". Also press the SD card until you hear the "click" to eject it.

Turn device on or off.
Software Installation
Double click the executable and follow the instructions of the installer. The Installer contains the software and the driver installation.

New Versions / Updates
We publish the newest version of the software on our developer website in the main category "Application Software" -> "Windows".
Quickstart

The Software can work in two different modes. The first mode is called "Streaming Mode" and the second mode is called "Data Mode".

**Streaming Mode:**
In streaming mode you'll work with the GPS - Logger connected to a USB port to the PC. The data is sent directly to the software via USB. You can see all movements and changes of the Logger in the "Streaming Dialog".
You have the possibility to record the streaming data by using the Toolbar functions. The Streaming mode also allows you to start a replay of a recorded raw data file. To start a replay, use the entry in "File" menu -> "Open Recording as Stream".

**Data Mode:**
Data mode is the visualization of data which are loaded from files. Use the entry in the "File" menu -> "Open Recording for Map View". You can import two types of files

1. Raw data file - copied from the SD-card of your GPS Logger device.
2. MDR file - Recording from our MCS Spectrum Analyzer software.

**Differences between the file types:**

1. The raw data file from the GPS Logger contains all GPS and sensor information. You can visualize the waypoints, compass, tilt, roll, and speed on the map. The diagram will show the elevation.
2. MDR file contains the GPS information and measurement information on the track. The diagram will show a maximum measurement value on a waypoint. To create the MDR file, you have to connect a SPECTRAN and GPS Logger device to our MCS software. Record the measurement in the MDR format.

Example Raw data file (left) and MDR file (right):
Copy data from GPS - Logger Micro SD card

Turn off your GPS - Logger and remove the SD crad from the SD slot. Put the micro SD card into a usable adapter (SD card or USB adapter included in delivery) and connect it with your PC. Copy the recorded file in a folder on your hard disk (import directly from SD card also works, but from hard disk is faster). Now you can load the file in the software.
Device calibration

To calibrate the sensors of your GPS-Logger device, move the logger switch to position "ON" and turn on the device by moving the power switch to position on. The power LED flashes fast and indicates that the calibration mode is enabled.

Move the device like shown in the picture below:

If you have trouble in using the movement above, you have also the possibility to rotate the device over all three axis to calibrate the device.

To complete the calibration, move the logger switch back to position "OFF".
Connect Device

Connects the GPS Logger device for streaming mode. If there are more than one GPS Logger devices available, a connect dialog will open where you can choose the device to connect.

Start Streaming

If you have already connected a device, you can press the play button to start streaming. The streaming dialog will open and you'll see all necessary information.

Stop Streaming

Stops the streaming and closes the streaming dialog.

Start Recording

Start recording of the streaming data

Break Recording

Pause recording of the streaming data

Stop Recording

Stops the recording
Data Mode

Visualization of the data on the Map.
Software Dialogs

This chapter explains the different dialogs of the software.

Streaming mode
Export for Google Earth
**Timestamp**

Current timestamp in local time.

**Satellites**

**Minimize window**
Maximize window

Close window

Elevation

Shows current elevation in meters.

Latitude

Shows current latitude in degree.

Course

Shows current course in degree.

Longitude

Shows current longitude in degree.

Show Position in Google Maps

If you have a GPS signal, you can click this button to see your position in Google Maps.

Speed

Shows current speed in meters per second.

Tilt angle

Shows current tilt angle in degree.

Roll angle

Shows current roll angle in degree.
Control is enabled if you open a recording for replay. Adjust replay speed by moving the slider left or right.
Dialog Export for Google Earth

Choose output file

1. Include original GPS data
   - Include original GPS data

2. Output path and filename
   - [Field]

3. Choose output file
   - [Browse]

4. Close dialog
   - [Close]

5. Export
   - [Export]

   Complete the file export and close dialog.

6. Compression
   - [-]

   Set a value bigger than one to compress the output. This means, every point \( x \) (\( x \) equals entered value) will be ignored if it isn't an required point.

Make sure you have enabled / loaded a database record before opening the export dialog!
Altitude Offset

Artificial increase of the altitude value to get a visible mark on all points in Google Earth. If value is null, it is possible that some points are located under the world texture of Google Earth.

Cancel

Close dialog.
**Aaronia Gps-Logger Software - Main Screen**

**Systemmenü menu bar**
Contains commands for changing the window.

**Toolbar**

**Menu bar**

**Minimize button**
Minimize window.

**Maximize button**
Maximize window.

Close button

Close window.

Status bar

Map area

Map controls
Navigation and zooming.

**Compass indicator**

**Roll sensor indicator**

**Tilt sensor indicator**
In this module, you can start a replay or select special points. If you select a point in this view, the point will be highlighted on the map.
Systemmenu menu bar

1 System menu

Contains commands for changing the window.