Altitude Manager

About

Altitude manager enables to fine-tune obtaining altitude values from your mobile device. It is divided into three main tabs:

- **main settings**
- **settings of altitude offset**
- **settings of pressure sensor**

Settings

Altitude offset

- **Use altitude offset** - switches on the definition of offset between real and GPS altitude. More in the **Offset tab**.

Pressure sensor

- **Use pressure sensor** - switches on measuring precise altitude by the device built-in barometric pressure sensor. More in the **Pressure tab**.

Elevation data

- **Optimize GPS altitude** - uses offline elevation data (HGT) to optimize GPS altitude values. Computed altitude has similar accuracy to an average GPS but does not contain serious errors GPS units usually make. HGT files are downloaded usually together with Locus Maps or can be additionally downloaded by a “fill altitude” command editing tracks.



Warning for pilots: this method is not recommended for activities when you are **not moving on the ground** - displayed altitude values are influenced by the ground altitude measuring and calculation

Altitude filter

- **Filter** - applies filter to altitude to reduce value fuzziness. Heavier filters cause less fuzzy altitude values but slower reaction on altitude changes. Scale ranges from no filtration to an ultra heavy filter.

Offset

Altitude calculated by internal GPS unit is related to a different method of referencing the Earth surface than that used in maps. The difference between them is called **Geoid height** which is distance between Geoid and reference elipsoid.

Locus Map can define this offset by three methods:

- **Manual correction** - basic method used when the exact offset value is known
- **Automatic correction** - method used in most cases - Locus Map can compute offset of the whole world from a Geoid model. This method is accurate enough for use in mobile phones and sufficiently precise for all locations (the offset slightly varies based on location). This method is available in Locus Map Pro only
- **Altitude NMEA correction** - mobile device communicates with GPS unit over a special messages called NMEA. These messages contain values of Geoid height that Locus Map can read and apply them to correct this offset.Some devices report incorrect values so this method is unreliable.

Pressure Sensor

Some devices are equipped with barometric pressure sensor. Barometric sensors measure atmospheric pressure very precisely which can be used for calculating relative altitude changes. I.e. if you know certain pressure at certain altitude you can calculate altitude changes between known and current position.

The pressure sensor must be calibrated to a known altitude value so that it can be used for real altitude value calculations. Locus Map offers several methods:

- **Automatic** - Locus Map uses GPS altitude or SRTM files altitude and current barometric pressure as basic values and relates all other measurements to these values. It also checks measured values in 2 hour intervals and eventually re-calibrates the pressure sensor.This method is available in Locus Map Pro only.
- **Pressure at sea level** - current pressure value at a particular sea level as the reference can be obtained from the Internet. The resulting altitude calculation is also quite accurate but the base pressure changes in time so it can be a problem.
- Altitude - uses some other source of ground altitude - external maps, measuring, tourist guide posts, etc. as the reference. Locus Map then calibrates the pressure sensor according to this value.



Some devices like e.g. Samsung Galaxy Note II turn off the pressure sensor in standby mode. If you want to use pressure sensor during e.g. track recording, make sure your device maintains the pressure sensor on also when the screen goes off.

From:
https://docs.locusmap.eu/ - **Locus Map Classic - knowledge base**

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