



GPSmeter 5

by MASPware

USER'S GUIDE



As at December 28th, 2008

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ABOUT THIS GUIDE

This guide will give you a short introduction and an explanation of MASPware GPSmeter. The program has been made as easy to understand as possible, and therefore it will be self-explanatory in most cases.

However, there are a few settings and displays, which have to be explained a little more detailed for a better understanding.

At the end of this guide, you will find a small selection of questions, which are not further explained in particular sections of this guide. Amongst others there will be explanations of a few technical terms.

INTRODUCTION

MASPware GPSmeter turns every Windows Mobile device into a precise measuring instrument for lengths, heights, areas, velocities, times and many more by using a GPS receiver. It provides a lot of possibilities of data analysis and export.

This program organizes everything using so called measurements. You can also call it tracks, ways, etc., its all the same: A collection of positions with timestamps

SETUP

MASPware GPSmeter can be quickly and easily installed by using the provided setup file (.exe file). You can download the setup file from our website at any time. The setup routine performs every necessary step and installs the program automatically on your mobile device.

You can also install the program by using the .cab file. You just have to copy the file to your device and then access and run it directly. The setup will start automatically and perform all necessary steps.

You can install MASPware GPSmeter on the internal memory or an external memory card. We recommend installing it on a memory card.

Note: Windows Mobile 2003/SE or WM5 devices need to have the .NET Compact Framework to be installed. Newer devices do not need an extra installation of the

.NET Compact Framework. You can get the .NET Compact Framework from Microsoft at no charge.

WORKING WITH MASPWARE GPSMETER

STARTING MASPWARE GPSMETER

MASPware GPSmeter starts by tapping program symbol in the program overview. When the program starts it will perform a couple of checks. During this process you will see a so-called "splash-screen".

When all settings are loaded, the "measurements" module will be automatically started.

SCREEN LAYOUT

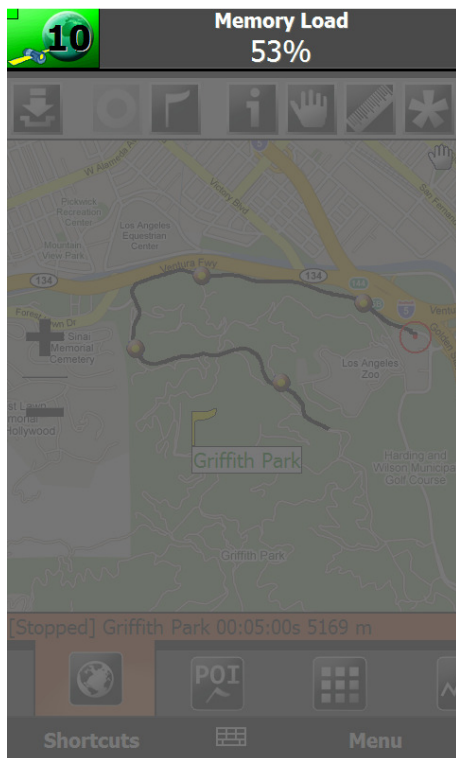
The screen is divided into four parts.

Furthermore, there are two softkey-menus at the bottom. On the left, a shortcut-menu will give you access to the most important features of GPSmeter. On the right, you have access to program-wide settings.

Here are the four screen areas:



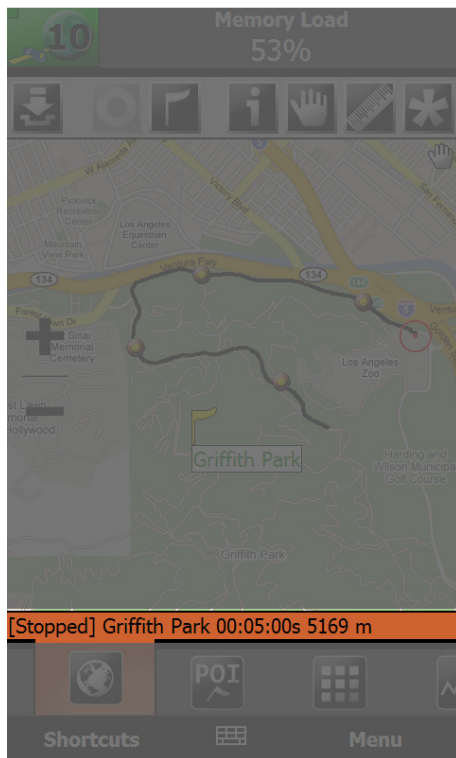
Upper information bar



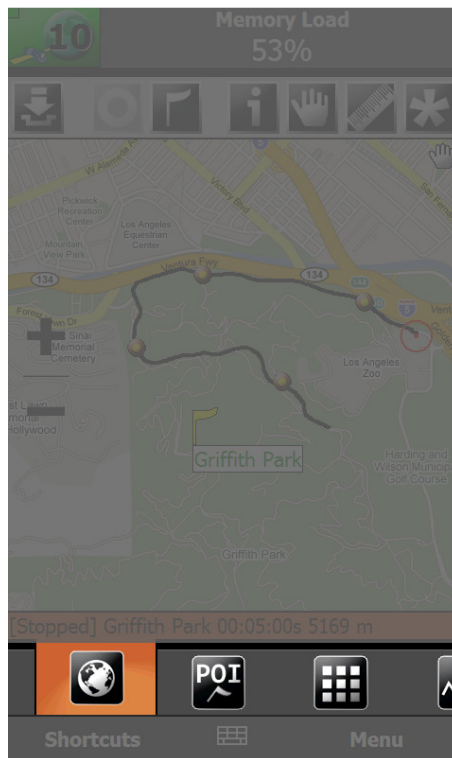
Module area



Measurement info bar



Touch-Menu



STATUS BAR

The status bar will provide information about data like time, current speed etc. in real-time. You can switch between these values by tapping on this bar. On the left side, it shows a GPS Status Icon.

GPS status icon

The MASPware GPSmeter status icon will be displayed in the top left-hand corner of the status bar. This icon provides information about the connection and receiver status.

The MASPware GPSmeter status icon is divided into two fields:

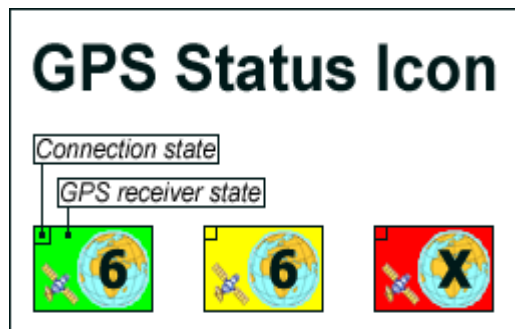
Connection state (top left): This field indicates the current connection status to the GPS receiver. Green means "connected", whereas red means that there is no connection to the GPS receiver (or that the connection has been aborted).

GPS Receiver state (main field): This field shows the current GPS receiver status. At first, the current amount of satellites, that can be used to calculate the current position, will be displayed. The colour indicates whether the receiver is ready to measure or not. In other words, it indicates whether the current position (height is not considered here) can be determined or not.

- **Green:** The received data is ideal for the measurement.
- **Yellow:** The receiver receives positions, but they cannot be interpreted, since they do not satisfy the current accuracy settings (can be modified via precision settings).
- **Red:** The receiver cannot perform an interpretation, because there are no satellites in range.

Furthermore there is a small satellite symbol at the bottom left-hand corner. If the satellite symbol starts to blink, the current height data cannot be interpreted, because it does not satisfy the current accuracy settings (behaves like the state "Yellow" for positions). You can work around this problem by making sure, that you have a better view of the sky or by adjusting the precision settings.





By tapping on the GPS status icon an additional screen will appear, showing you the raw values of the received data and satellites.

MODULE SELECTION

MASPware GPSmeter has been developed on a modular base. That means several modules can be loaded and any of them will display either different areas of a measurement or additional program functions.

You can choose modules using the Touch menu.

MEASUREMENT INFORMATION BAR

The information bar shows current information about the selected measurement. Here the program will constantly display the selected measurement as well as its status.

TOUCH MENU

The Touch menu provides quick access to all modules of GPSmeter. The active module has an icon with an orange background.

To change a module, tap on the current icon (the one, which is orange), hold and slide. By moving left or right, you can choose other modules.

MODULES

There are **measurement-depended** modules and **measurement-independent** modules.

Measurement-depended modules need an active measurement selected to display values.

Measurement-independent modules show additional gps/computed data or provide additional program features.

MEASUREMENTS

The measurement module serves as a complete tool for the management of all measurements. **The measurement which you select here applies to the entire program**, that means all values that are displayed for a measurement belong to the currently selected measurement.






Here you can also create/start, edit, delete, load, save or export measurements.

To quickly access some functions in the measurement area you can use several buttons at the top. Moreover all these functions can be reached directly by using the context menu (tap on the list and hold).

Due to limited memory resources on mobile devices, MASPware GPSmeter will never load all existing measurements. You have to select yourself which measurement has to be loaded (in order to work on it). As a matter of course, new measurements do not have to be loaded. They are available from the start.

If a measurement is not required any longer, you can "store" it. The measurement then will be completely saved and removed from working memory. By closing the program all measurements will be automatically stored.

Every measurement will be displayed with a small icon that shows you the state of the measurement.

	Measurement is stored, that means it has not been loaded completely into working memory.
	Measurement is being loaded, saved, stored or exported.
	New measurement
	Running / active measurement
	Measurement has been paused.



Measurement has been finished.

MAPVIEW

The Mapview shows a 2D visualisation of the current selected measurement.

The most important features can be accessed using the top button bar. On the left, there is a special button. By tapping on it, it shows an additional menu for the Mapview.

The Mapview module supports map overlays and onlinemaps.

Overlays are user-calibrated JPG images, which are projected into the background of the map. For calibrating images and custom maps, you can use the OverlayCalibrator tool, which comes for free with every .EXE installation of GPSmeter. It also supports multiple overlays, which means, you can select multiple overlays at once and GPSmeter chooses the desired overlay to display, so you do not need to load and change the overlay every time you change the area.

Onlinemaps are calibrated overlays. The only thing is, you need to have an internet connection available (which can cause additional costs!). GPSmeter supports cached onlinemaps, so every onlinemap is saved for later use. E.g. you can use a free Wireless LAN to load onlinemaps for the desired position and zoom level. On the road, you have access to these onlinemaps without having an online connection.

There is also a special option for the Mapview: Area-mode. If its active, GPSmeter connects all markers into an area shape. Please keep in mind, GPSmeter uses markers to calculate areas, which you can set everywhere you want (using the marker-button in Mapview or the Shortcuts-Menu on the left).

POIs

Here you can administer POIs (Points of Interest) and waypoints. They are used for recording and recovering certain positions. There is also a compass view that shows the direction and distance to a selected waypoint.



MEASUREMENT VALUES

The Measurements-value module provides access to all values collected and calculated by GPSmeter. **This is the most often used module for measurements analyses!**

There are up to 10 fields (depends on device screen resolution), which you can customize. By tapping on each field, you can choose which value to show.

DIAGRAMS

The diagram module features graphical analysis. Here the developing of velocity or height can be displayed in real-time or regular mode. Moreover you can adjust the display range. By tapping on a measurement point in the diagram the values of this point will be shown.

TABULAR VIEW

The Tabular view shows every single measurement point collected by GPSmeter in a tabular view.

STOPWATCHES

The stopwatches module provides simple and measurement-independent timing devices.

ONE-TIME MEASUREMENTS

One-time measurements are database-independent short measurements. You can use this module e.g. for measuring a short length, which is not important for further analysis (e.g. how long was my golf drive).

MOTION

The motion module will show the entire movement data on a screen. This data does not depend on a selected measurement, but is gathered in real time from the GPS receiver.

The compass display shows the current route. If a waypoint is selected, the information about this waypoint will be shown as well. By tapping on the compass you can switch between zoomed and complete view.

The two movement indicators at the bottom show the currently averaged velocity and height. The corresponding bars display the tendencies, that means:

Velocity: **accelerating** or **decelerating**

Height: **increasing** or **decreasing**

WARNINGS

The warnings module provides a possibility to set up warnings (velocity, height, battery status). Exceeding or falling below certain values will then cause an acoustic and visual warning by MASPware GPSmeter.

GPS

The GPS module provides access to any GPS receiver (internal or external).

Furthermore, here you can set an altitude offset. Its a correction value for altitude measurements.

Here you can set precision settings, too.

BUTTONS AND SYMBOLS

Sorted by order of appearance



Add

Add a dataset



Edit

Edits current selected item (measurement or POI/waypoint). At GPS module, an precision dialog opens



Delete

Removes current selected item



Start

Starts current measurement



Pause

Pauses current measurement



Stop

Stops current measurement



Switch view

Switches between list- and iconview



Menu

Opens an additional menu



**Add marker**

If live-mode is active, a marker is added to the current position. If not, you can tap on the map, where to add a marker.

**Add POI/waypoint**

See adding marker. Here, it opens the POI/waypoint-add-dialog.

**Info-Mode**

Activates info mode.

**Move-Mode**

Activates move-mode. Tap and move in mapview, to slide map.

**Length measurement mode**

Tap and move in mapview to measure length.

**Switch live-mode**

Activates or Deactivates live mode. When in live mode, your current position is always centered on the map.

**Zoom IN****Zoom OUT****Show older datasets**

Moves „left“

**Show all datasets**

Similar to full unzoom

**Show younger datasets**

Moves „right“

**Reset**

Reset data in stopwatches or one-time measurements

FAQ – FREQUENTLY ASKED QUESTIONS

What does “length calculation mode 2D / 3D” mean?

MASPware GPSmeter measures two different values, the “distance over ground” and the real distance. Factoring the measurement of height into the calculation of the distance makes the difference. “Distance over ground” will ignore the height (2D mode), that means here only the pure geographical distance will be measured no matter what a difference in altitude has been covered.



To give you an illustrative example: It makes a difference whether you pass a distance of 10 meters on an even floor, or pass the same distance on the floor while climbing up a hundred meters.

What are markers for? And what is the difference to POIs/Waypoints?

Markers are used in measurements only! POIs are measurement-independent. Markers are always connected to a specific measurement and represent a special position.

Markers are used for area-calculations. You need to set at least 3 markers, to do area calculations.

What is the difference between storing and saving a measurement?

By stopping the program a measurement will automatically be "saved". The measurement will be kept in working memory, so that it can for example be edited or be seen entirely.

By "storing" a measurement it will be saved as well but the measurement will be removed from working memory. Of course it can be loaded again at any later time.

What is the position signal?

If you activate the position signal, every reception of a valid position as well as movement will cause a short beep (acoustic).



Systems of units? What does that exactly mean?

Worldwide, there are three important measuring units, which are supported by MASPware GPSmeter:

- Metric (predominantly in Europe): meter, kilometre
- Statute (UK and US): foot, mile
- Nautical (in the navy) foot, nautical mile

You can switch between these systems at any time. The calculations will be converted in real time and will be shown immediately. The unit of velocity can be set separately and independent of the unit of measurement.

DOP and precision values? What's that all about?

GPS receivers calculate their positions using the so-called "3-D-multilateration"-technique. According to this, intersections of different satellite areas are evaluated (to say it plainly). In the ideal case those areas intersect exactly at one point. In reality this is not the case. The intersection is rather a "fuzzy" area. The bigger this "fuzzy" area the more diluted the determination of a position becomes, because there are more possibilities for a position. These values of dilution are being output by the GPS receiver. They are called "Dilution of Precision" values or just DOP-Values.

The GPS receiver (and also MASPware GPSmeter) makes a difference between vertical (height) and horizontal (distance) accuracies. These are the VDOP- and HDOP-values. And exactly those thresholds can be adjusted in MASPware GPSmeter.

The smaller these values are, the better the accuracy will be. Here is a list that gives you a description of several DOP-value areas.

1 (Ideal): The highest possible value, that GPS is using in order to achieve the highest possible precision (high precision measurement).

2-3 (Excellent): At this level there is enough information about positions available, so that the position data is still very good.

4-6 (Good): This level is the minimum limit, if you want to talk about a "good measurement". It is still fully adequate for purposes as navigation for example.

6-8 (Moderate): The position data can still be evaluated and used, but the quality can be considerably improved. A better view of the sky is highly recommended!

GPS receivers output DOP-values up to 50! MASPware GPSmeter will only allow maximum values of 8, because values anywhere beyond 8 do not provide enough accuracy for a "good measurement".