



Handbook

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GPS PAD

GPS PAD is a combination of a notepad and GPS software with numerous analysis functions.

Application areas: navigation for hiking, bicycling and car driving, log file analysis, traveling documentation, athletic efficiency control, acquisition of spatial data, geocaching, GPSdrawing and much more.

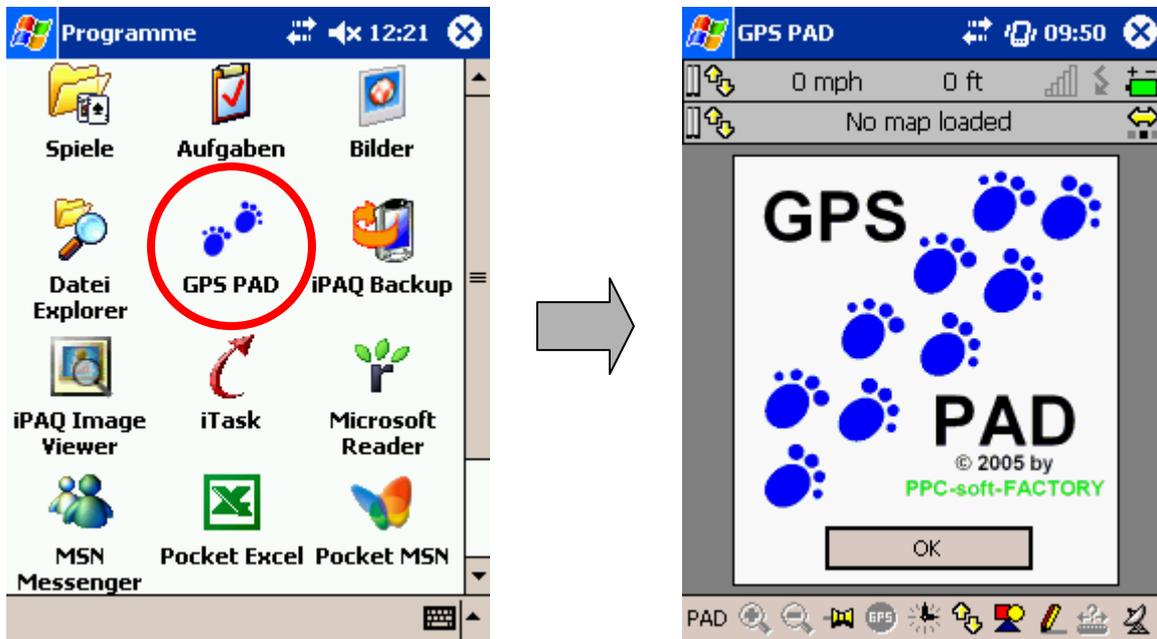
System requirements: GPS PAD is working with Windows Mobile 2003 and needs only approximately 620 KByte memory. It does NOT need any additional software packages like 'Basic Runtime Modul' or '.NET Compact Framework'. The program can also be installed on a memory card. Any NMEA 0183 GPS receiver can be used.

GPS PAD Features:

- moving map navigation
- zoom in/zoom out
- panning function
- map overview with moving position navigation
- freehand drawing
- waypoints
- GPS track recording and replaying
- distance measurement
- signal strength, position and number of satellites
- height profile
- height correction
- speed profile
- average speed
- elevation
- track length
- navigation to target
- target distance
- current speed, height and position
- direction arrows
- compass
- import NMEA, TomTom, Mobile Navigator, TOP 50, PCX5
- export Top 50
- different display formats and units
- energy management
- battery status
- English or German language
- automatic backup file
- handbook

Installation

Connect your PocketPC via ActiveSync with your PC and start the programm GPSPAD.exe on your PC. GPS PAD will be installed automatically on your PocketPC after accepting the licence agreement. You will find GPS PAD in the **Programs** folder on your PocketPC.



Registration

GPS PAD will ask you for a registration code after taping on 'OK' on the start window. You will find the registration code in your purchase confirmation mail. It is possible to test GPS PAD without registration in the demo modus. But it is not possible to save, import or export data in the demo modus and GPS PAD will be automatically terminated after ten minutes. Besides these restrictions you have the same functionalities as in the registered version.

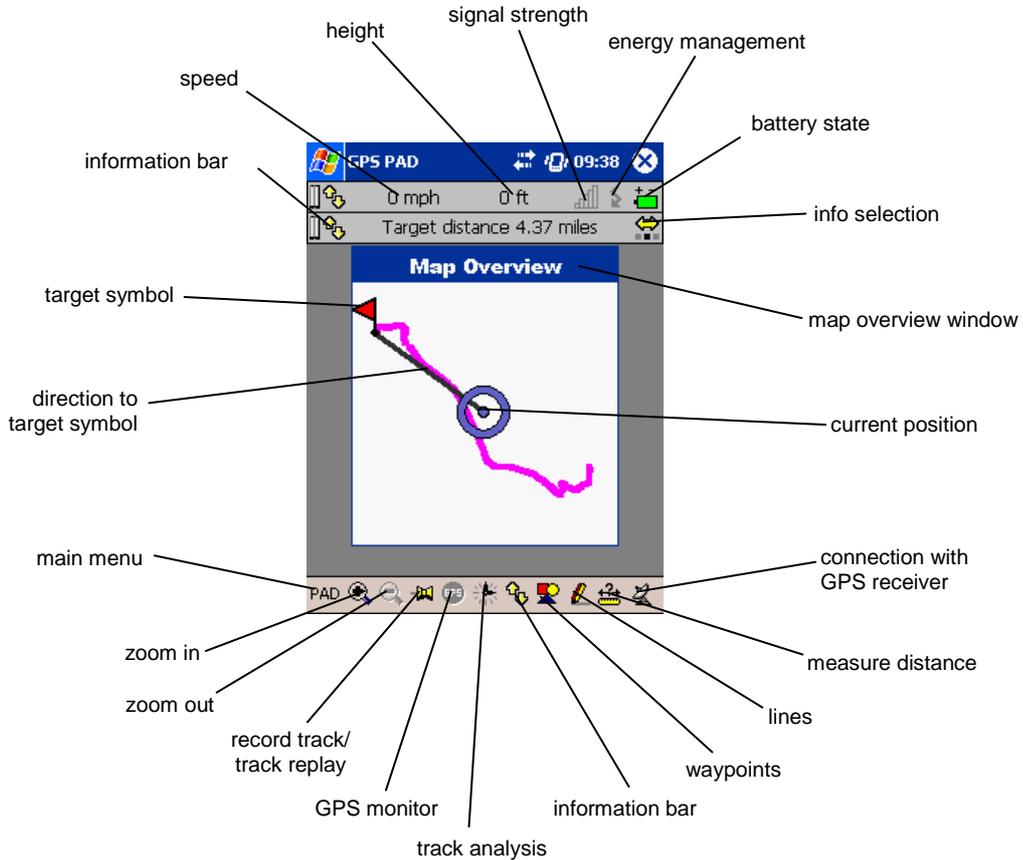
Important: We are recommending to test GPS PAD in demo modus before buying it. We have tested the program with different combinations of PocketPCs and GPS receiver but we cannot guarantee that the program will run with every possible device combination.

Select language

GPS PAD can be used in different languages. If you have downloaded a version that has not English language as standard setting, tap first on **PAD -> Options -> Language ...** and select English.

First steps

The installation file contains three map examples that can be used for a first test of GPS PAD. Tap on **PAD** and then on **Open ...** and select an example map. The following figure shows the basic functionalities of the user interface:



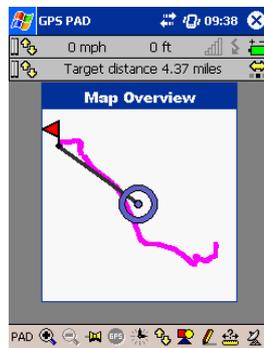
One of the main important objectives of the development of GPS PAD was to create a user-friendly interface. Most of the functionalities are self-explanatory. Take your time and “play” a little with the program. You will be able to understand many functionalities by yourself. For deeper knowledge/understanding, you have to continue with this handbook.

Basic functionalities

ZoomIn/ZoomOut

The zoom buttons can be used in order to change the scale of a map. GPS PAD has nine different zoom levels and one overview level. If you are in the smallest zoom level and tap again on ZoomOut, you will attain automatically to the overview level that shows the whole map independent from the map size. You can change back to the zoom levels by tapping on ZoomIn. The scale and the compass are only shown in the zoom levels but not in the overview level. In GPS PAD you have two options to change the position on a map:

- In the overview level, GPS PAD is using moving-position-mode. That means that you can move the position symbol on the screen and the map is on a fixed position
- In the zoom levels, GPS PAD is using moving-map-mode. That means that the map can be moved and the position symbol is always on a fixed position



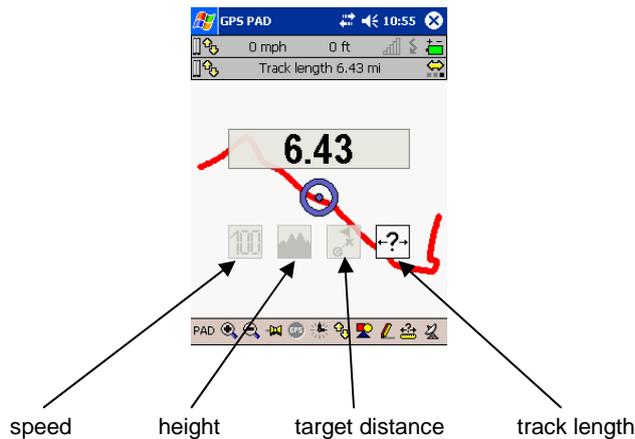
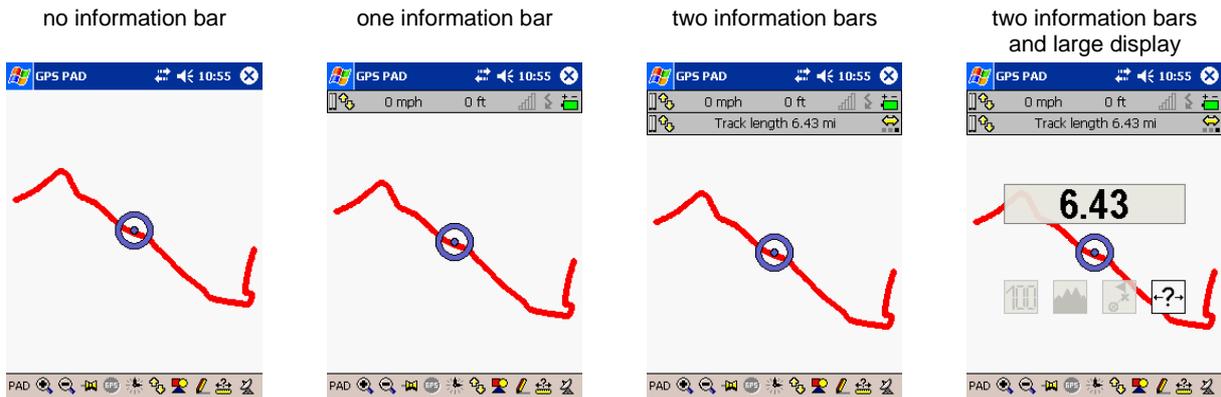
map overview
moving-position-mode



zoom level
moving-map-mode

Information bars 

You can select between no, one or two information bars in the main window by tapping on this symbol. You can tap on the symbol in the tool bar or in the information bars. If a map is loaded, you can also activate a large display for the current speed, height, target distance or track length. Additionally there are four large buttons for selecting the content of the large display. The buttons are displayed in transparent grey colour or in black and white, depending on if they are selected or not.



Information

Depending on which information you have selected, you will see in the second information bar the position in geographical coordinates, the distance to a target or the route length:

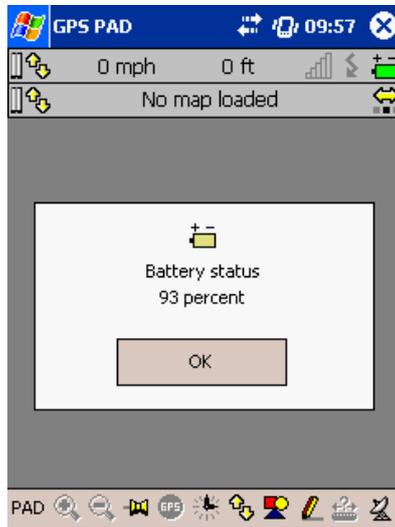


Battery status

When using a GPS program, it is very important to be informed about the battery status. For that reason GPS PAD has integrated a battery status symbol. The following battery states are displayed:



You can get the exact battery status in a separate window by tapping on the battery status symbol:

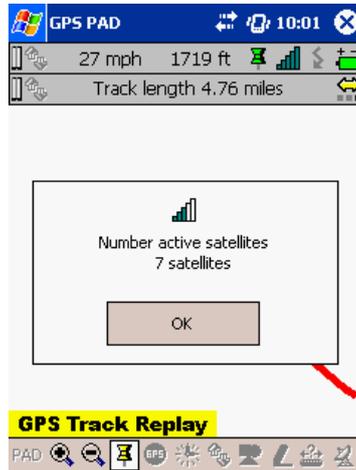


Number of active satellites

If GPS PAD is connected with an active GPS receiver or if a GPS track is replayed, the number of active satellites is displayed in the first information bar. The higher the number of active satellites the more accurate is the GPS position.

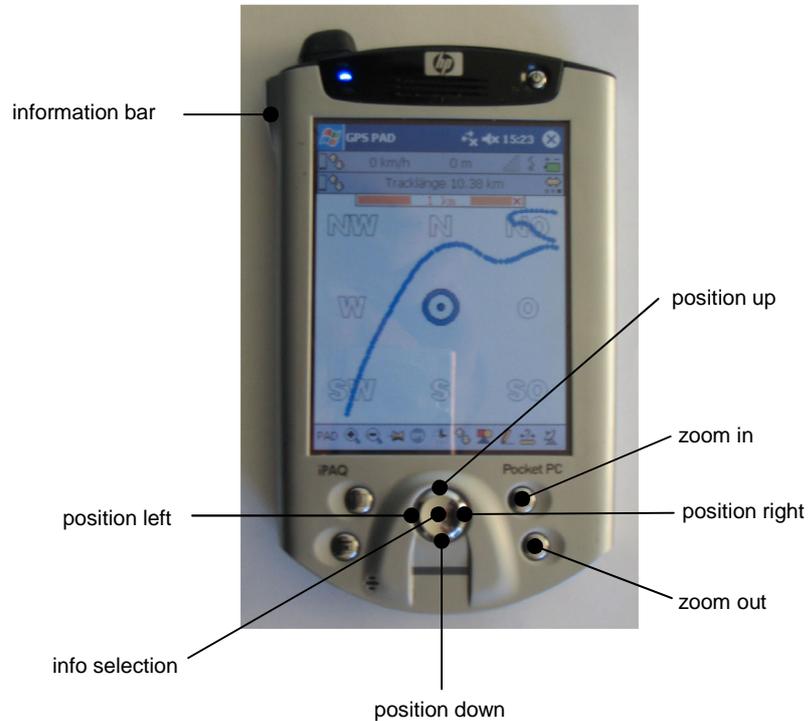


You can get the exact number of active satellites in a separate window by tapping on the same symbol:



Hardware key control

GPS PAD can be controlled by tapping on the screen or using the hardware keys. The assignment of the hardware keys is depending on the device. The best way to find out the assignment is to try it. It is possible to change the map position, the zoom level, the number of information bars and the content of the information bars with the hardware keys. The following figure shows the hardware key assignment of an IPAQ 5550:



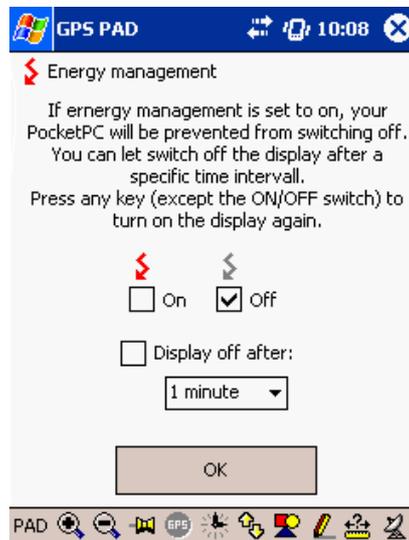
Tip: In many situations, the hardware keys can be used together with other functionalities. If you are measuring for example a distance in a map, the moving-map-mode is not active in order to select the measurement positions. However, the position of the map, the number of information bars and the content of the information bars can still be changed by using the hardware keys. This functionality is also available for example by drawing lines or waypoints.

Energy management

A PocketPC is switched off automatically after a specific time interval, if it is used without external power supply. Using the energy management can prevent this automatic switch-off. The energy management symbol in the first information bar shows, whether the energy management is active or not:



The energy management settings can be changed by tapping on this symbol or on **PAD -> Options -> Energy management ...**. The following window will be displayed:

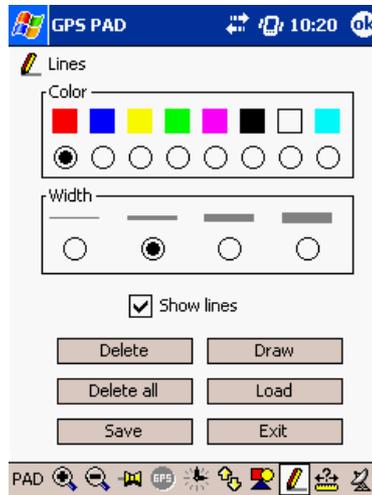


Besides preventing the PocketPC from switching off, it is possible to let turn off the display after a specific time interval. When the display is turned off, the PocketPCs has less power consumption and therefore a longer battery time. Press any key (except the ON/OFF switch) to turn on the display again.

Important: If the energy management is on, it is completely prevented that the PocketPC is automatically switched off. This means that the battery can completely be discharged (which can lead to data loss), if you do not switch off the PocketPC by yourself.

Drawing lines

In GPS PAD it is possible to draw on a map. Tap on the symbol with the pencil in the tool bar. The following window will appear:



The line color and width can be selected in the upper part of the window. The checkbox **Show lines** defines, if the lines should be shown on the map or should be hidden. Furthermore you have the following functionalities:

Draw: If you tap on this button, GPS PAD will return to the main window and you can draw on the map. The drawing is done with the stylus directly on the map. Use the hardware keys, if you want to move the map or change the zoom level. GPS PAD will remain in the drawing mode until it is explicitly stopped (by taping once more on the line symbol and selecting **Exit**) or when you change into another mode.

Delete: GPS PAD returns to the main window and you can delete lines by taping directly on the lines or by raising a rectangle. Again, the hardware keys are active and GPS PAD will stay in the delete mode until it is explicitly stopped or another function is selected.

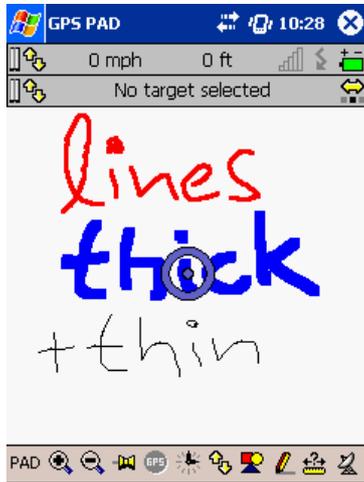
Delete all: Deletes all lines.

Save: Lines can be saved in a separate ASCII file format with the ending .lin (see also chapter *GPS PAD file formats*).

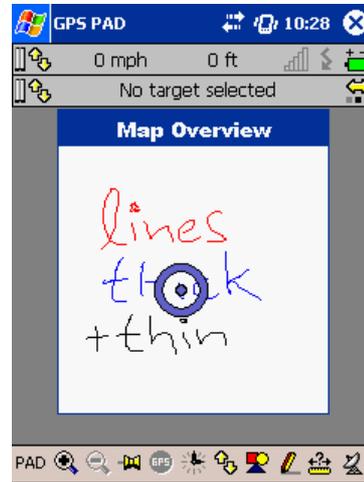
Load: Loads line files. If no map is loaded, GPS PAD will generate automatically a map with a user defined resolution.

Exit: GPS PAD returns to the main window. If GPS PAD was in drawing mode or deleting mode, the mode is stopped.

Important: In the map overview lines are represented always with the smallest line width, independent from the line width in which they were drawn. With that, a better overview is achieved.



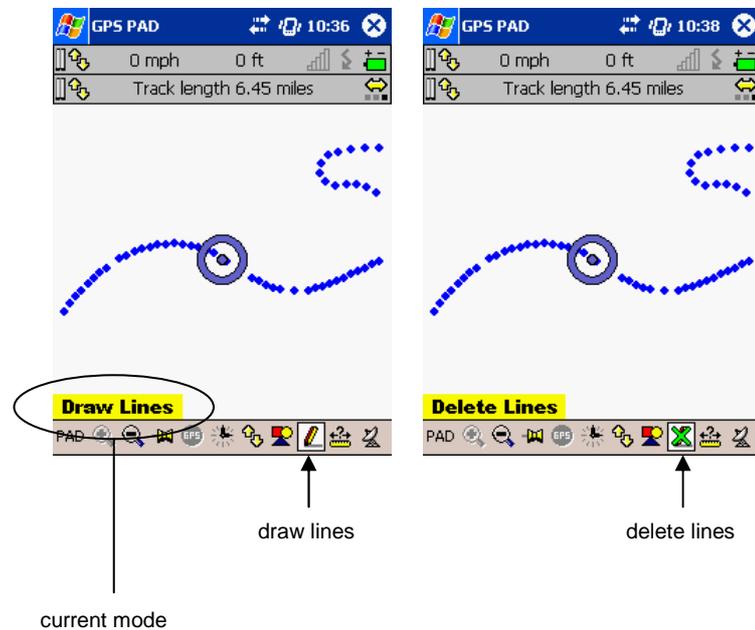
zoom level:
lines are represented
as they were drawn



map overview:
lines are represented
with smallest width

GPS PAD Modes

The different modes in GPS PAD are shown in a text field in the lower left part of the main window and the corresponding symbol in the tool bar is highlighted:



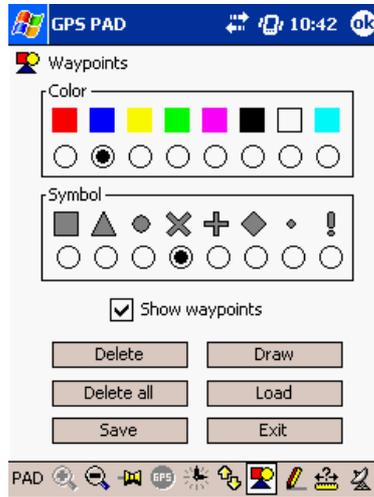
The following other modes in GPS PAD do exist:

- Draw Waypoints
- Delete Waypoints
- Measure Distance
- Delete Track Points
- Record GPS Track
- GPS Track Replay

If no mode is shown, then GPS PAD is in moving-map-mode or moving-position-mode, depending on, whether the map is displayed in one of the zoom levels or in the overview level.

Working with waypoints

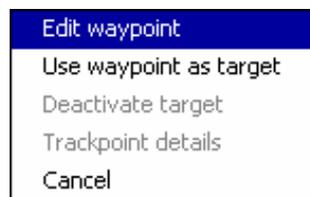
Waypoints can be used to mark targets and to navigate to them. Tap on the symbol  in the tool bar and the following window will appear:



The management of waypoints is done exactly in same way as the management of lines. Read first the chapter *Drawing lines*. In the following, only the additional functionalities of waypoints are discussed.

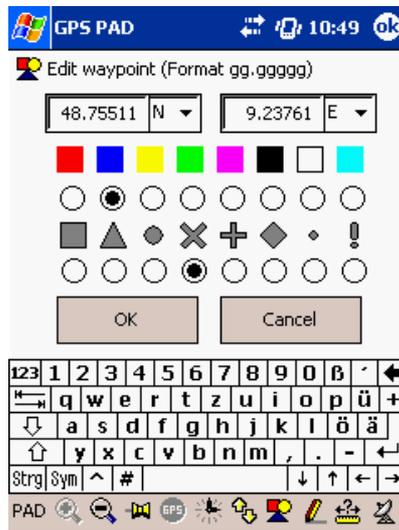
Drawing waypoints: Tap on the button **Draw** and GPS PAD will return to the main window. Tap with the stylus at the position where you want to draw the waypoint. The position of the waypoint can be changed, while the stylus is pressed on the screen. The waypoint is stored not until you release the stylus from the screen.

Edit waypoints: The color, the symbol and the coordinates of a waypoint can be edited. In order to edit a waypoint, you must be in moving-map-mode or moving-position-mode. Tap with the stylus on the waypoint and hold it without changing the position. The following popup menu will appear:

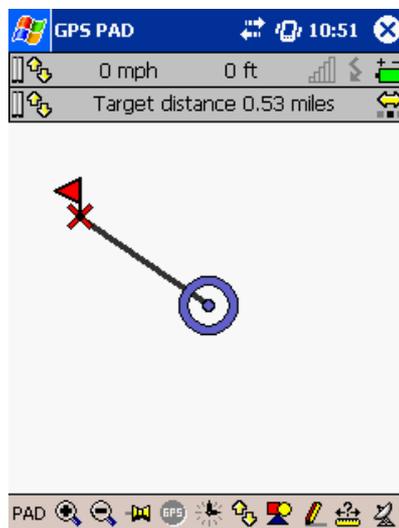


Tap on **Edit waypoint** and the following window will appear:

You can change the color, the symbol and the coordinates of the waypoint in that window. The coordinate format of waypoints can be changed under **PAD -> Options -> Units**.

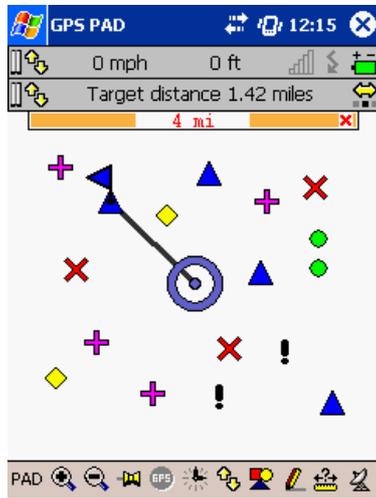


Using waypoints as a target: If a waypoint is selected as a target, it is highlighted with a flag, a line is drawn from the current position to the symbol and the target distance is shown in the second information bar (in case that this information was selected with ). Tap with the stylus on the waypoint and hold it without changing the position. Select **Use waypoint as target** in the popup menu. The following figure shows a waypoint that is selected as a target:

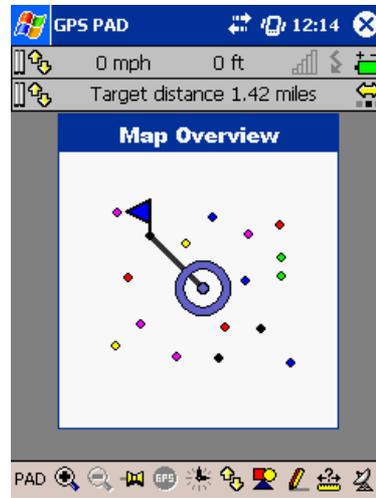


Deactivate target: Tap with the stylus on any position of the screen and hold it without changing the position. Select **Deactivate target** in the popup menu.

Important: In the map overview waypoints are represented always with small symbols, independent from the symbol in which they were drawn. In this way, a better overview is achieved.



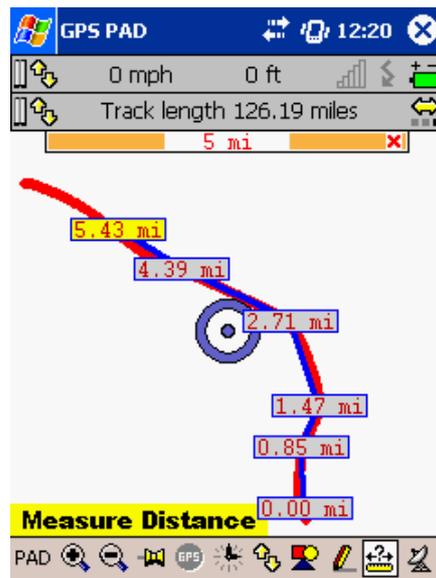
zoom level:
waypoints are represented
as they were drawn



map overview:
waypoints are drawn
as small symbols

Measure distances

Tap on the symbol with the lineal in the tool bar and then tap on the position of the map, where the measurement should start. You can define a measurement line with any number of intermediate points. Taping again on the screen creates a new point. You can change the position of the new point while the stylus is pressed on the screen. Tap again on the symbol with the lineal in order to end the measurement. The functions of the hardware keys are active in measurement mode. That means that you can move the map, change the zoom level or select the information bars with the hardware keys during measurement.

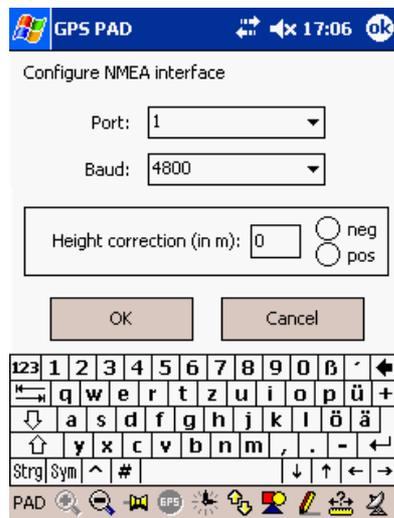


Connecting GPS

In order to receive GPS data, you have to connect the GPS receiver with GPS PAD. Your GPS receiver must send the data in NMEA 0183 format. The connection between GPS PAD and the GPS receiver is always done with a serial port, independent from the type of your GPS (CF card, SD card, Bluetooth, serial cable). The number of the port and the baud rate can be found in the technical documentation of your PocketPC and GPS respectively.

If you do not have access to a technical documentation, the only way to find out the parameters is to test different combinations. The following tips can help you to find out the right combination: Many GPS receivers are sending their data with 4800 baud. If the GPS is connected via a serial cable, the port is very often port 1, whereas Bluetooth GPS are very often using Port 8. Already tested settings can be found in the chapter *Device configurations*.

The baud rate and the port number have to be set before you connect the GPS receiver with GPS PAD. You have to do this only once (except you are changing your GPS receiver), because this information is stored and will not be lost after ending the program. Tap on **PAD** -> **Options** -> **NMEA ...** and select the corresponding settings in the following window:

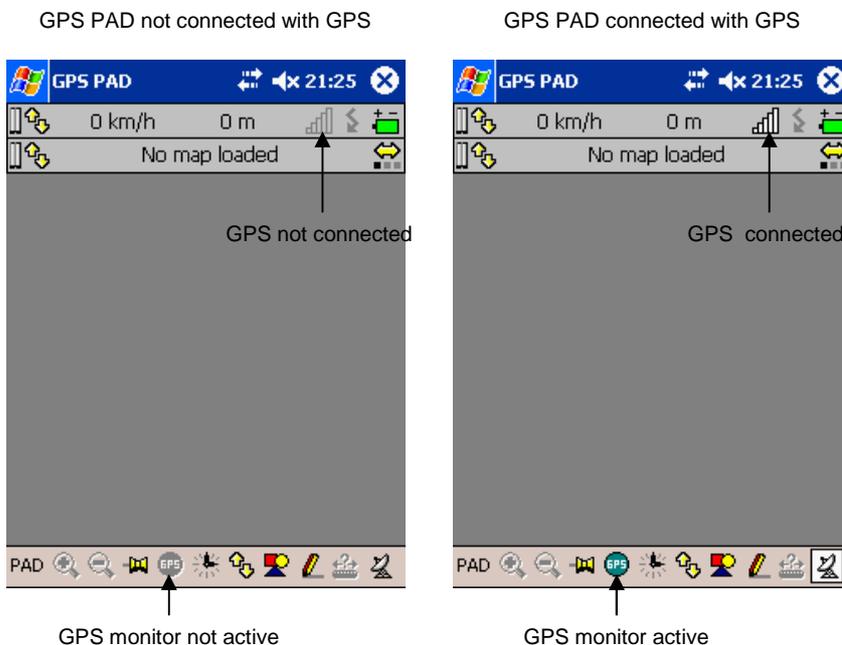


Tap on **OK** and the GPS connection is configured. After that, tap on the antenna symbol in the tool bar. The symbol will be highlighted to signalize that GPS PAD is trying to setup a connection with the GPS receiver. Wait at least ten seconds (the connection time can be up to 30 seconds, depending on your hardware configuration). The following window will appear, if the connection can be established:



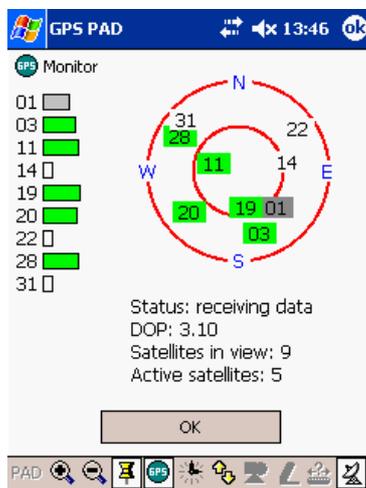
If you have problems to connect your GPS receiver with GPS PAD, look into chapter *FAQ* in this handbook. There you will find further tips.

There are two indicators in the main window where it can be seen, that GPS PAD ist actively connected with a GPS receiver: On the one hand, the symbol, that shows the number of active satellites, changes its color from grey to black and white (or shows the number of active satellites respectively) and on the other hand, the GPS monitor symbol in the tool bar gets active:



GPS monitor

The GPS monitor shows the satellite constellation and other GPS parameters. Tap on the symbol with the green circle in the tool bar to start the GPS monitor:



The left part of the window shows the numbers and the signal strength of the visible satellites. If the rectangle beside a number is filled with white color, the GPS receives no data from the corresponding satellite. If the rectangle is filled with grey or green color, the GPS receives data. The larger the rectangle, the higher is the signal strength. If the rectangle is filled with green color, the corresponding satellite is used for the position calculation.

The positions of the satellites are shown in the upper right part of the window. The letters are standing for the compass directions. The closer a satellite is drawn in the center of the circle, the more upright is his position on the horizon. The closer a satellite is drawn at the border of the circle, the lower is his position on the horizon. The state of the satellite is drawn in the same color as in the left part of the window.

The following further information are shown:

State:

- *not connected*: no GPS is connected
- *connected*: a GPS is connected but no data are received. Check, if your GPS configuration is correct
- *receiving data*: a GPS is connected and GPS PAD is receiving data

DOP: Dilution of Position: the smaller this value, the more precise is the calculation of the GPS position

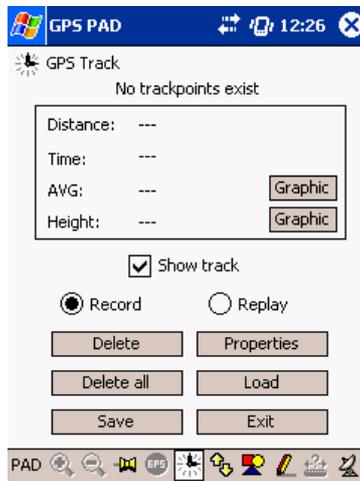
Visible satellites: number of visible satellites

Active satellites: number of satellites that are used for the calculation of the GPS position

Important: Some GPS receivers are configured in such a way that not all NMEA sentences are activated. In some cases, the protocols GSV and/or GSA are not activated and therefore you will not see the positions and signals of the satellites. **This affects only the satellite monitor - all other functionalities are not affected.** GPS PAD is receiving the data correctly, if the State is "receiving data". You can find tools for free in the internet, with which you can reconfigure your GPS receiver in such a way that also GSV and GSA sentences will be transmitted.

Recording tracks

A track is a recorded series of positions that represents a route. GPS PAD can record and replay tracks. Tap on the symbol for the track analysis  in order to record a track:



In this window you can switch between **Record** and **Replay** of GPS tracks. Select **Record** in order to record a new track and then tap on **Exit**. Now you can either open an already existing map with **PAD -> Open ...** or create a new map with **Pad -> New ...**. The creation of a new map is only possible, if GPS PAD knows the current position. Therefore, the creation of new map is only possible, if GPS PAD is connected with a GPS receiver. If you create a new map, GPS PAD asks you first for the size and the resolution of the new map:



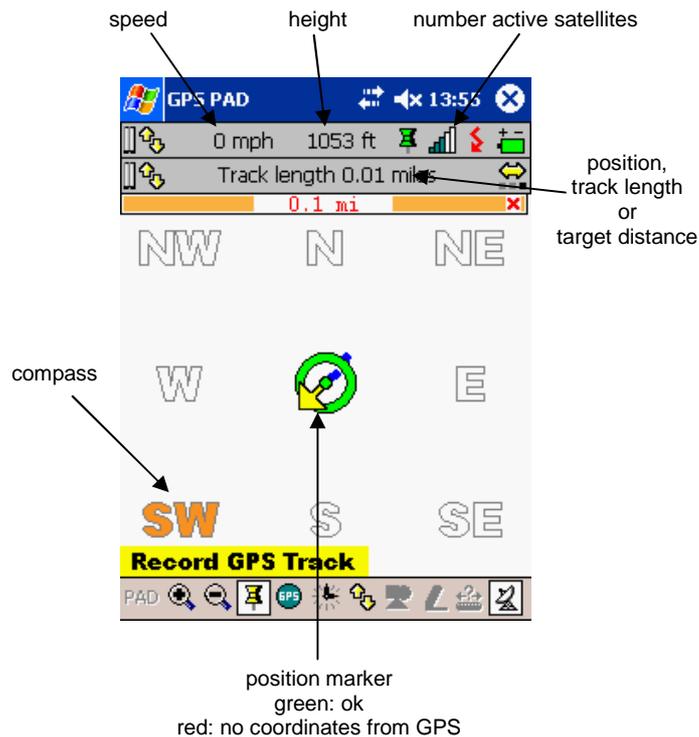
The resolution defines the pixel size of the map. Normally, you should select a small pixel size for short distances and low speed, whereas you should use a larger pixel size for long distances with higher speed (for example if you are driving a car). However, it is no problem, if you select a small pixel size when using a very large map.

Also, it is no problem, if you select a map size that is too small. GPS PAD continues to record the data and draw them on the screen, if your are crossing the map boarder. It is also possible to change the map size, after you have recorded GPS data (see chapter *FAQ*). However, the map size determines the presentation of the map in the map overview. If you have selected a very large map size, the track will be displayed very small in the map

overview and you will not be able to see details. If you have selected a too small map, you will see only a part of the track in the map overview. Select a map size that will be approximately large enough to show the whole track. Then tap on **Create map** to create the new map. If the GPS receiver is able to calculate the current position, you will see now a new map on your screen.

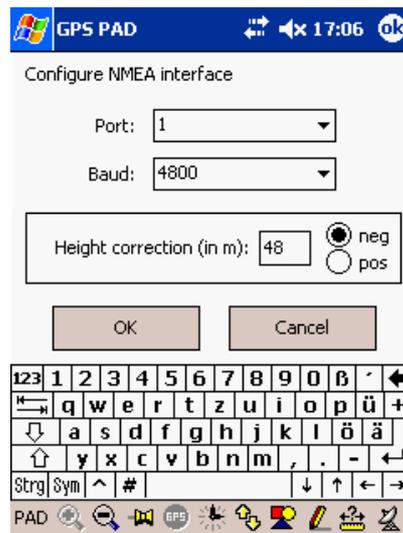
Tap on the symbol with the needle in the tool bar in order to start the track recording. GPS PAD will take over the map positioning in track-recording-mode. That means, your current position is shown at the center of the screen, if you are in one of the zoom levels, or on the position of the position marker respectively, if you are in the overview level. It is possible to change the zoom level, the number of the information bars and the content of the information bars with the stylus or the hardware keys. Tap again on the symbol, if you want stop the track recording.

You can see the speed, height, compass direction, number of active satellites and alternatively the position in geographical coordinates, the track length of the target distance during track recording. The GPS state can be seen on the color of the position marker. Green color means that the receiver is sending a valid position and red color means that at the moment, the GPS receiver is not able to calculate a valid position.



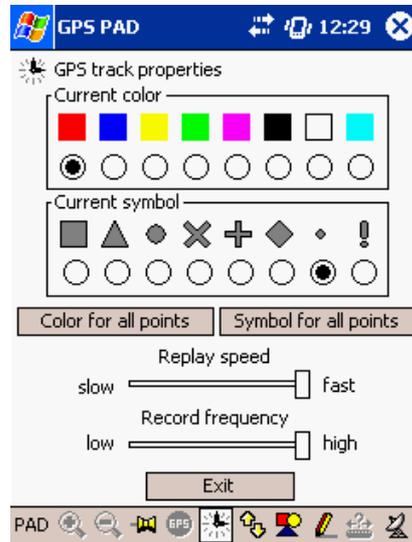
GPS height correction

The heights, which are measured by a GPS receiver, are corresponding to the WGS84 ellipsoid. It is possible that there is a difference to the real height, because the WGS84 ellipsoid is only an approximation of the form of the earth. For example in Germany this difference is in average approximately 48 meters. In order to measure the real height, it is possible to define a height correction for the NMEA data of the GPS receiver. Tap on **PAD -> Options -> NMEA** and input the correction in the field **Height correction**. With **neg** and **pos** you can define, whether the correction should be subtracted or added.



Changing the track properties

Tap on the clock symbol in the tool bar and then on **Properties**. Alternatively you can tap on **PAD -> Options -> GPS Track options ...** to change the track properties:



In the upper part of the window you can change the presentation of the track with **Current color** and **Current symbol**. This enables to change the track color or the track symbol within a track in order to separate different parts of the track.

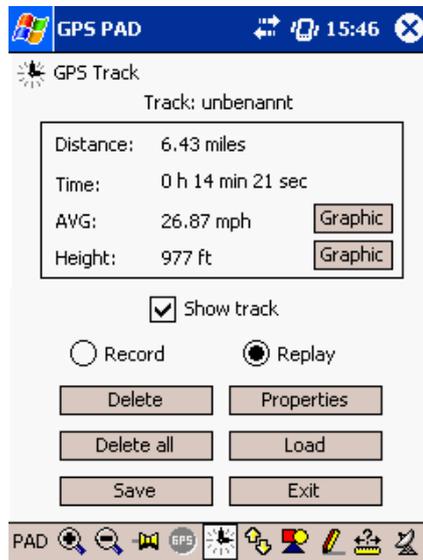
The presentation properties of the whole track can be changed with **Color for all points** and **Symbol for all points**.

The **Replay speed** and the **Replay frequency** can be changed with the two sliders.

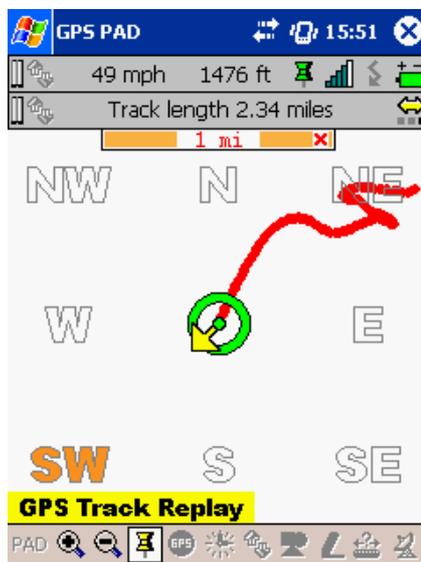
Tip: Track points are using the same symbols as waypoints, but they can be distinguished from waypoints because they have no black border.

Replaying tracks

Tap on the symbol with the clock in the tool bar and select **Replay**:



Then tap on **Exit** to go back to the main window. Now, you can replay a track by tapping on the symbol with the needle in the tool bar. The presentation is exactly in the same way as it was, when recording the track. Tap again on the symbol to stop the track replay.

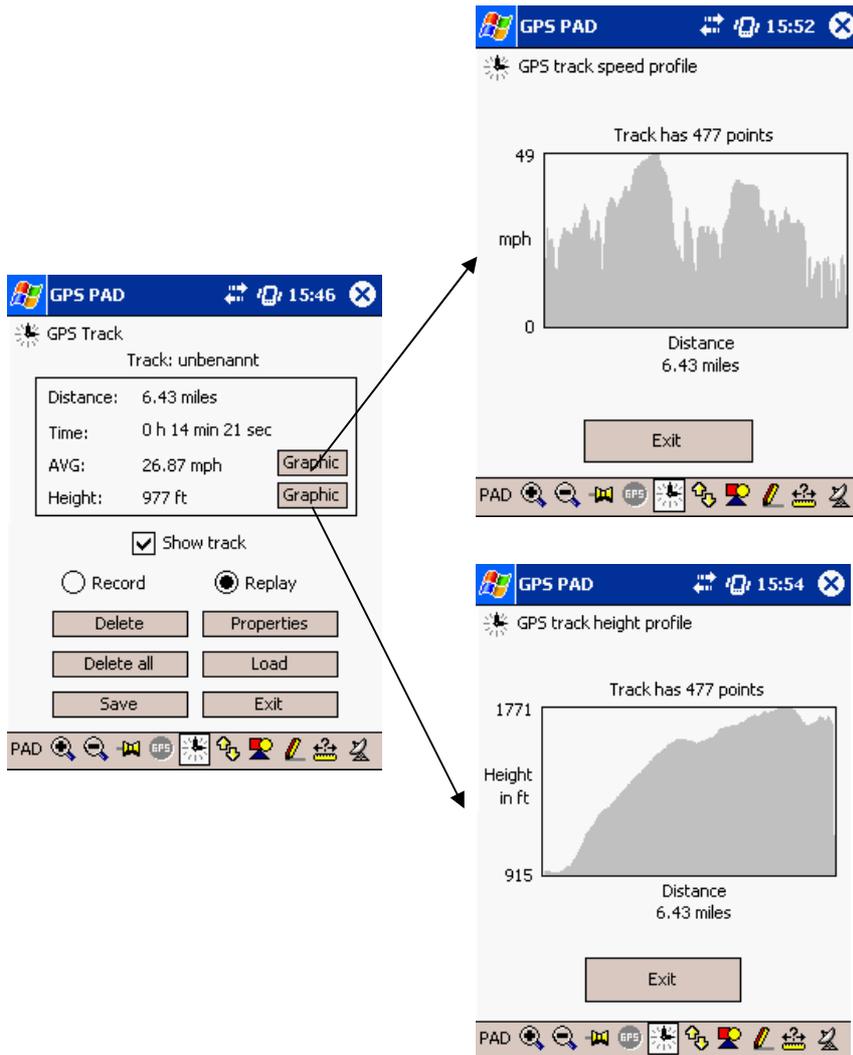


Tip 1: If you want to continue the replay at that position where you have stopped the replay, simply tap again on the symbol with the needle. If you want to start the track from the beginning, tap on the symbol with the clock and select again the replay mode.

Tip 2: The zoom levels can be changed during the the track replay with the hardware keys.

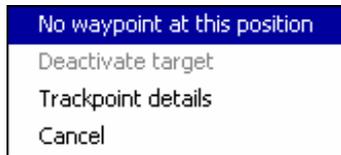
Analysing tracks

Tap on the symbol with the clock in the tool bar in order to analyse the tracks. You can see the track name (if the track was loaded from a file), the distance, time, average distance and the sum of all positive height differences. With the two buttons **Graphic** you can select a speed profile or a height profile:

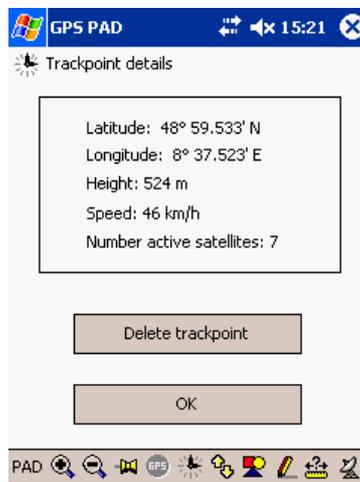


Show details of trackpoints

Tap with the stylus on a trackpoint and hold it without changing the position. The following popup menu will appear:



Tap on **Trackpoint details** (if this menu point is represented in grey color, you have not tapped on a position nearby a trackpoint and the menu point is inactive). First, the selected trackpoint will be blinking for about 2 seconds, in order that you can check, that you have selected the right trackpoint. Then, the following window will be shown:



If you tap on **OK**, you will come back to the main window. Alternatively you can delete the selected trackpoint by tapping on **Delete trackpoint**.

GPS PAD file formats

GPS PAD uses 4 different file formats:

- trackpoint files (.trk)
- waypoint files (.weg)
- line files (.lin)
- map files (.pad)

The position, size and resolution of a map are stored in the map file. A map file can contain additionally trackpoints, waypoints and lines. Therefore, a map file combines all map elements together.

Map files are stored in binary format. All other files are store in ASCII format and can be edited with a standard editor or converted into other formats.

Waypoint, line and trackpoint files can also be used to transport information from one map to another map. For example, you can open a map and store the trackpoints of the map in a separat trackpoint file. Afterwards close the map and open a new map. The trackpoints of the pre-stored trackpoint file can now be loaded in the new map. With that technique you can combine trackpoints, lines and waypoints from different maps in every way you want.

Loading and saving of trackpoints, lines and waypoints can be done in the corresponding windows, that can be opened through the tool bar. Loading and storing of map files can be done in the main menu, that appears by tapping on **PAD**:

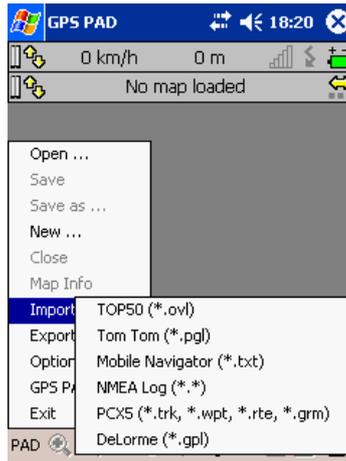


The following map management functionalities are available:

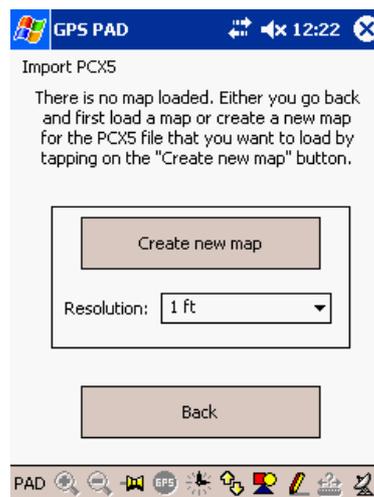
- **Open:** opens a map. If another map is already open, first this map is closed
- **Save:** saves the current map. If this map has already a name, this name is used as file name. Otherwise a name has to be defined
- **Save as:** saves the current map with a new name
- **New:** creates a new map at the current GPS position (see chapter *Record tracks*)
- **Close:** closes the current map

Import PCX5

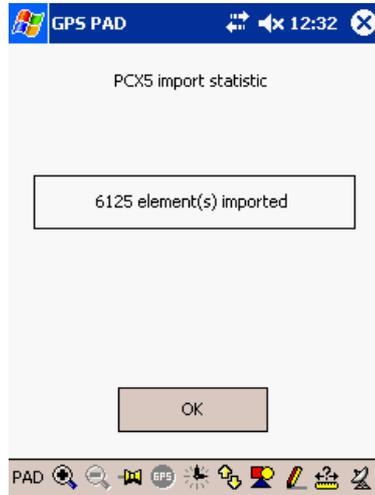
PCX5 is a file format, developed by the company Garmin, for the exchange of waypoints and trackpoints. This format is the mostly used format in the WWW for the exchange of GPS routes. PCX5 files can have four different file extensions: .trk, .wpt, .rte and .grm. The files contain either trackpoints or waypoints. The PCX5 waypoints are converted into GPS PAD waypoints. The PCX5 trackpoints are also converted into GPS PAD waypoints, but they are connected with GPS PAD lines. In order to import a PCX5 file, select the waypoint color and symbol as well as the line color and width in the corresponding menus. Then tap on **PAD -> Import -> PCX5**:



GPS PAD will create automatically a new map with a user-defined resolution, if no map is loaded. Select the resolution and tap on **Create new map**. Afterwards you can select the PCX5 file.



After importing the data, an import statistic is shown:



The following figure shows an imported PCX5-Track in GPS PAD:



Import DeLorme GPL

The GPL file format is used by DeLorme Map'n'Go and Street Atlas to store GPS tracks. GPL files can be converted into GPS PAD tracks. The importing is done in the same way as the importing of PCX5 files. First, select the color and symbol of the trackpoints in the track point menu. Then, tap on **PAD -> Import -> DeLorme (*.gpl)**.

If no map is loaded, GPS PAD will generate automatically a map with a user defined resolution. You can work with the converted tracks exactly in the same way as with tracks which were created by GPS PAD.

Import NMEA, TomTom and Mobile Navigator logfiles

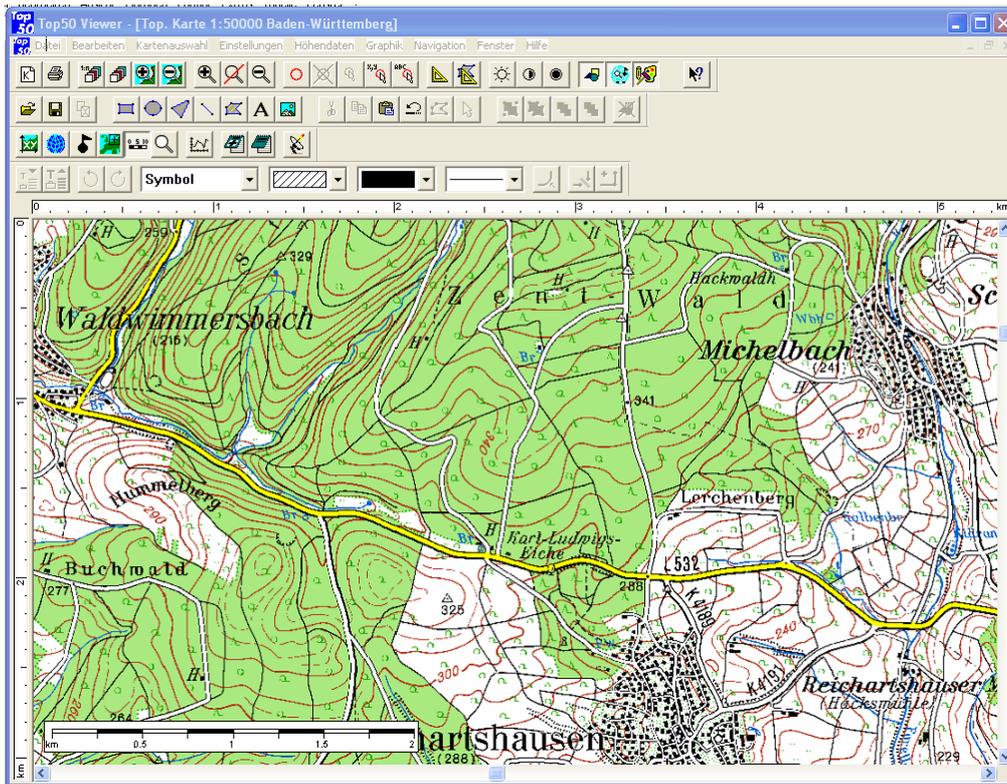
GPS PAD can import NMEA logfiles that are created by other programs. The NMEA logfiles are converted into GPS PAD tracks. The importing of NMEA logfiles is done in the same way as the importing of PCX5 files. First, select the color and symbol of the trackpoints in the track point menu. Then, tap on **PAD -> Import ...** and select the input format. The different input formats can be distinguished by the different file extensions:

- TomTom logfiles have the extension .pgl
- Mobile Navigator logfiles have the extension .txt
- NMEA logfiles can have any extension

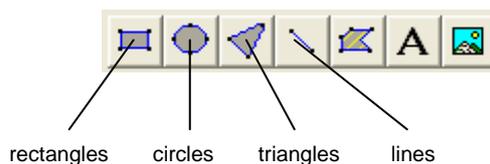
If no map is loaded, GPS PAD will generate automatically a map with a user defined resolution. You can work with the converted tracks exactly in the same way as with tracks which were created by GPS PAD.

Import Top50

Top50 is a digital map series produced by the Surveying Institutes of Germany and is based on the Geogrid Viewer of the company EADS. Top50 data are distributed on CD and contain topographical maps in different scales (1:50,000, 1:200,000 and 1,000,000). For some states in Germany also a Top25 version exists. The Geogrid Viewer is also used for the Austrian MAP CDs and the Swiss Map 100. The following figure shows the Geogrid Viewer with a topographical map in the scale 1:50,000:

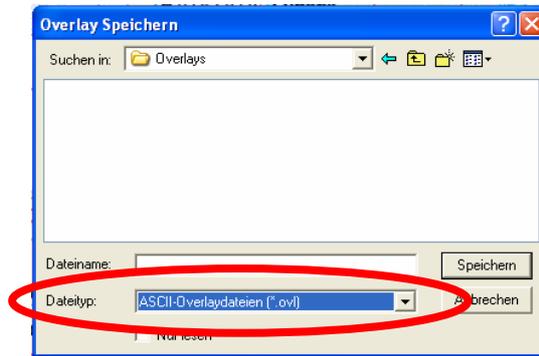


The Geogrid Viewer can represent raster based topographical maps and Overlays (ovf files), in which user-created lines and symbols can be saved independently from the map. The following Overlay elements can be imported into GPS PAD:

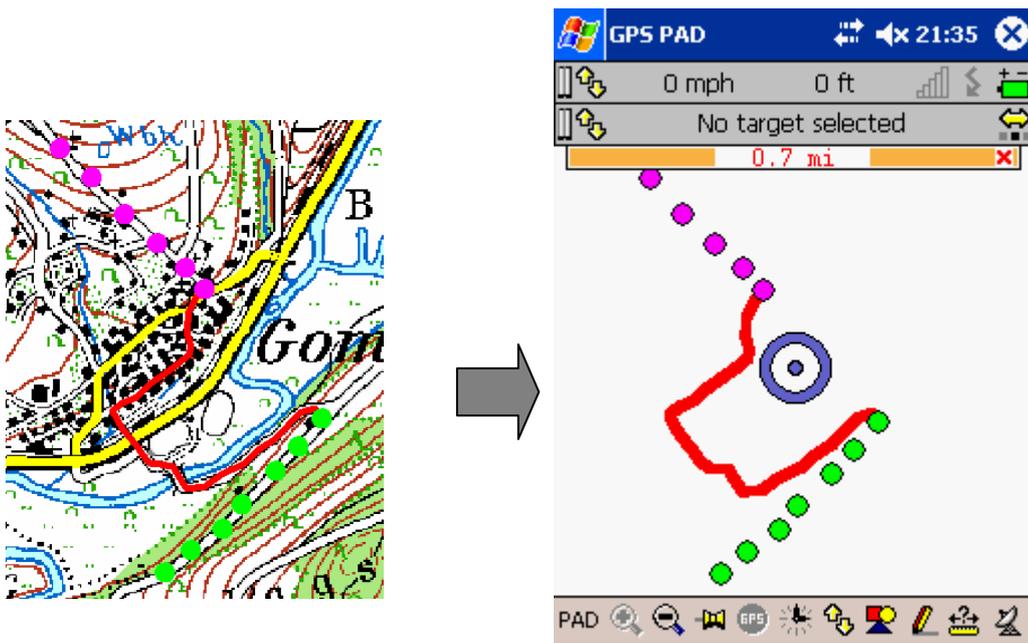


Rectangles, circles and triangles are converted into GPS PAD waypoints and lines into GPS PAD lines.

Create an overview with the Geogrid Viewer and save it as an ASCII overlay file (binary files cannot be imported into GPS PAD). Select *ASCII-Overlaydateien* when saving the data:



Copy the saved file on your PocketPC and import it into GPS PAD by tapping on **PAD -> Import -> Top50**. The following figure shows an example of overlay data in the Geogrid Viewer and the result of the import into GPS PAD:

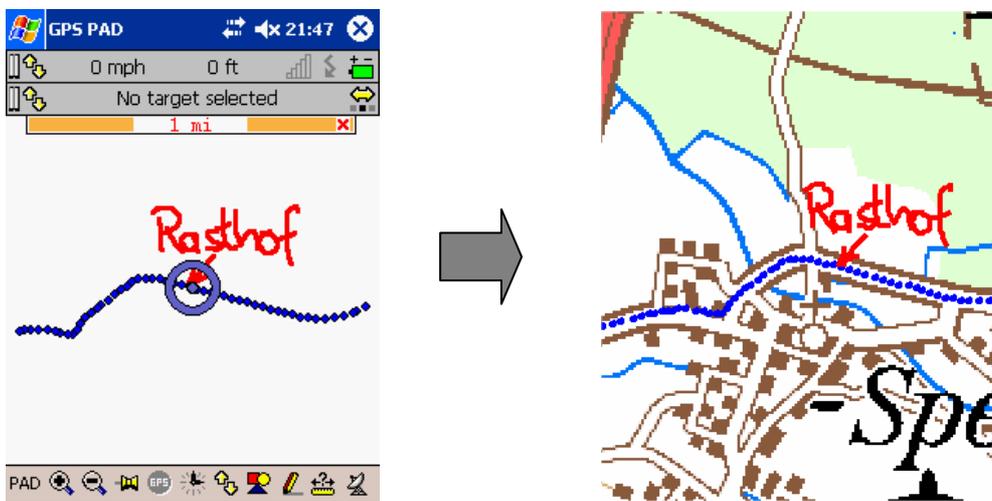


Tip: GPS PAD performs no “clipping” on lines. That means, that a line is only drawn on the screen, if at least two points of the line (start, end or intermediate points) are visible on the screen. Therefore, always insert intermediate points, if you are drawing long lines.

Export Top50

All elements of a GPS PAD map can be exported into an Overlay file (see also chapter *Import Top50*). GPS PAD trackpoints and waypoints are converted into Overlay symbols and GPS PAD lines into Overlay lines.

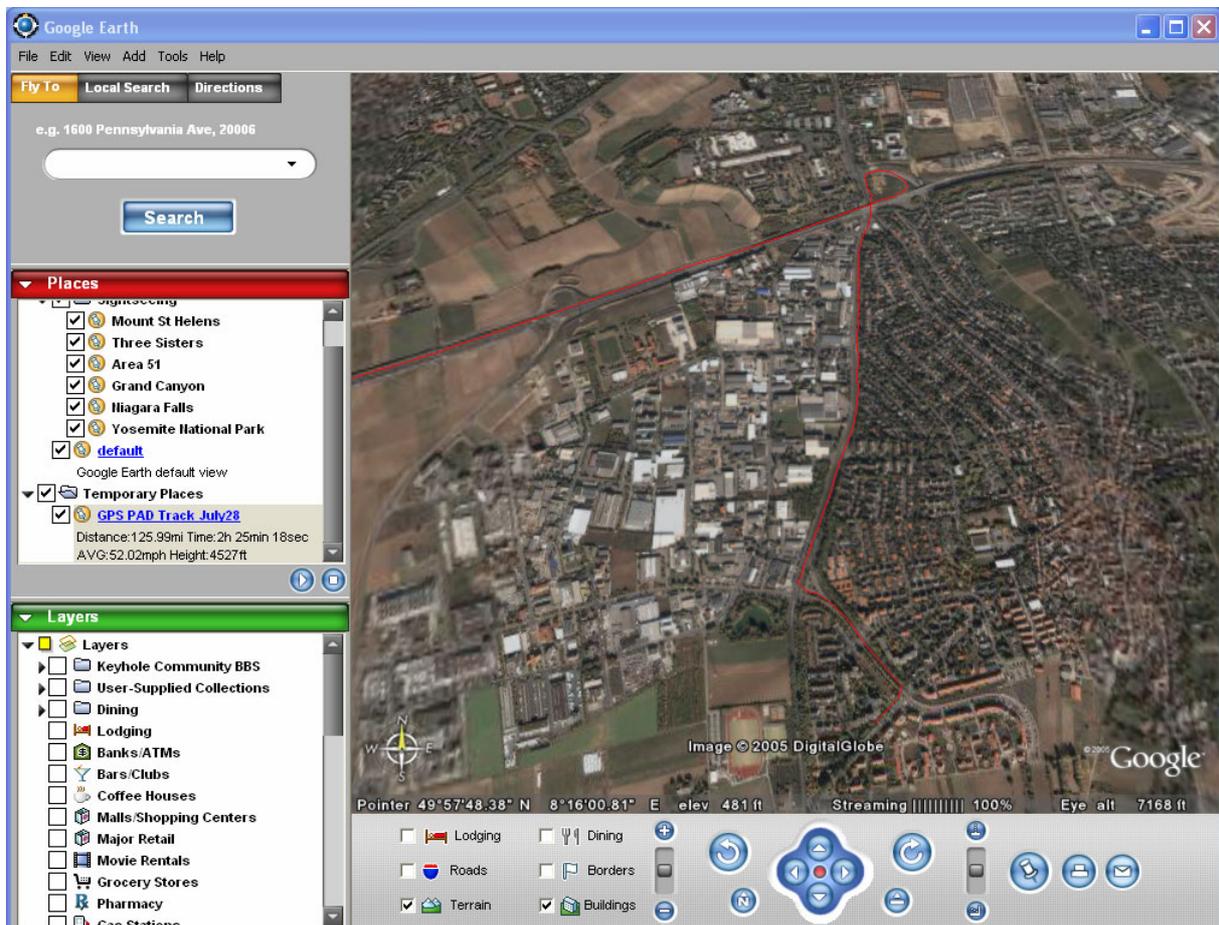
Tap on **PAD -> Export -> Top50** for exporting the data. Copy the exported file on your PC and load it into the Geogrid Viewer. The following figure shows a GPS PAD map that contains a track and lines, and the result of the export to the Geogrid Viewer (overlaid onto a 1:200,000 map):



Export Google Earth

Google Earth is 3-dimensional visualisation software that can be downloaded for free. With Google Earth it is possible to visualize satellite images from the whole world and superimpose own spatial data. Google Earth can be downloaded at <http://earth.google.com>.

GPS PAD has the possibility to export tracks into the Google Earth format kml. Tap on **PAD->Export->Google Earth (kml)**, input a filename and tap on **OK**. GPS PAD creates a file with the ending kml. Copy this file onto a PC, on which Google Earth is installed. Make a double click on the file symbol and Google Earth will be started and the track will be visualised. Further information about Google Earth can be found at the Google Earth homepage. The following figure shows a track in GPS PAD and the result of the export into Google Earth.



Options

GPS PAD provides numerous parameters that can be used to adapt the program to the user needs. Beside the specific parameters, that can be changed at specific places in the program, there are existing also many global parameters, that can be changed with **PAD -> Options**:



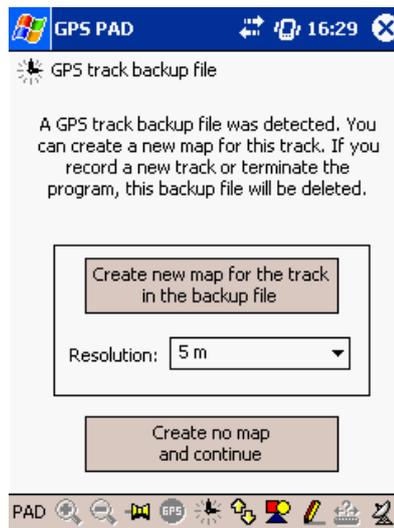
The following parameters can be changed:

- **Show scale:** defines whether the scale is shown or not in the zoom levels
- **Show compass:** defines whether the compass is shown or not in the zoom levels
- **Energy management:** with that parameters, you can prevent the PocketPC from automatic switching off and define the time interval, after that the screen is automatically switched off (see also chapter *Energy management*)
- **NMEA:** here you can select the port and baud rate of your GPS receiver (see also chapter *Record Tracks*) and the height correction (see also chapter *Height correction*)
- **GPS Track options:** here you can change the parameters for track recording and change the color and symbols of a track (see also chapter *Changing the track properties*)
- **Units:** here you can change the coordinate format and the units for displaying the speed, distance and height
- **Language/Sprache:** select between English and German language

GPS track backup file

Sometimes it can happen that your PocketPC will hang up because of a hardware or software failure while you are recording a track. In order to prevent a loss of data in situations like that, GPS PAD stores every 60 seconds a backup file of your GPS track. The backup file is stored under the name GPSBackup.trk in the root directory of your PocketPC. If you exit GPS PAD regularly, this backup file will be automatically deleted.

Every time when GPS PAD is started, it is first tested, if a backup file exists, which can only happen, if GPS PAD was not exited regularly. When a backup file was found, GPS PAD will display the following window:



You can create a new map for the track of the backup file and select the resolution of the map. If you do not want this, the backup file is deleted when you are recording a new track or if you terminate the program.

Saving of options

GPS PAD has numerous options, like NMEA parameter, symbol colors, units, etc. Different users will have typically different preferences, which options should be the default options. Therefore all options are stored when the program is ended and are reloaded when the program is started again.

Device configurations

The following table shows all PocketPC/GPS combinations that were already tested successfully from us:

PocketPC	Windows version	GPS	port	baud rate
IPAQ hx4700	Windows Mobile 2003 SE	Holux Bluetooth GR230	8	9600
IPAQ hx4700	Windows Mobile 2003 SE	CF Pretec Compact GPS	6	4800
IPAQ hx4700	Windows Mobile 2003 SE	Emtac Bluetooth GPS Receiver	8	4800
IPAQ h5550	Windows Mobile 2003	Holux Bluetooth GR230	8	9600
IPAQ h5550	Windows Mobile 2003	CF Pretec Compact GPS + CF Expansion	4	4800
IPAQ h5550	Windows Mobile 2003	Garmin eTrex + serial cable	1	4800
IPAQ h5550	Windows Mobile 2003	Emtac Bluetooth GPS Receiver	4	4800
Toshiba e750	Windows Mobile 2003	Holux Bluetooth GR230	8	9600
Toshiba e750	Windows Mobile 2003	CF Pretec Compact GPS	2	4800
Toshiba e750	Windows Mobile 2003	Emtac Bluetooth GPS Receiver	8	4800
MDA II	Windows Mobile 2003	Holux Bluetooth GR230	0	9600
MDA II	Windows Mobile 2003	Emtac Bluetooth GPS Receiver	0	4800

Frequently Asked Questions (FAQ)

Q: Is it possible to install GPS PAD on a memory card?

A: Yes, you can define any directory as install directory during installation.

Q: I have installed GPS PAD, but it cannot be started. What is the problem?

A: GPS PAD runs with Windows Mobile 2003 or higher. Earlier Windows versions are not supported.

Q: GPS PAD does connect to the GPS receiver. What can be the reason?

A: No other program is allowed to have access to the serial port. Deactivate all device drivers that are accessing the serial port, like an external keyboard. Also, no other GPS program is allowed to be active. If it still does not work, make a soft reset of your PocketPC and switch the GPS receiver off and on.

Q: I have bought GPS PAD and got a registration key, but the registration does not work and GPS PAD stays in demo modus. What is the problem?

A: The registration is based on the owner name of your PocketPC. First, check if you used the right owner name in your order. Then check, if there is an extra space at the beginning, the end or between two words of the owner name. If this is also not the reason, send an email to us with the following details: date of purchase, name of the sale platform, owner name and version number (the owner name and version number can be found under **PAD -> GPS PAD info**).

Q: GPS PAD has successfully connected to the GPS receiver but the status of GPS monitor is only "connected" and not "receiving data". What is the problem?

A: The probable source of error is a wrong baud rate. Sometimes, only a softreset of the PocketPC or switching off and on the GPS receiver will help.

Q: I have a Bluetooth GPS. Even though I have selected the right port and the right baud rate, nothing happens, when I want to connect the GPS receiver with GPS PAD. What am I doing wrong?

A: Probably, there is no link between the Bluetooth GPS and your PocketPC. Start the Bluetooth Manager and establish a link. Furthermore you should check, if your GPS receiver is switched on.

Q: I have a QTEK 2020 (or MDA II, MDA compact, XDA II or similar device) and a Bluetooth GPS. How shall I configure the NMEA interface?

A: These are devices with a MS Bluetooth Stack. Select port 0 and the baud rate of your GPS receiver. If the GPS receiver is the only Bluetooth device nearby, GPS PAD will connect automatically to the GPS receiver after 10 to 30 seconds after you have tapped on the antenna symbol in the tool bar. If there are more than one Bluetooth devices nearby, you have first to select the GPS device in a window that shows all available Bluetooth devices.

Q: GPS PAD can be successfully connected with the GPS receiver, but I cannot see information about the satellites in the satellite monitor. How can I change this?

A: Some GPS receivers are configured in such a way that not all NMEA sentences are activated. The protocols GSV and/or GSA are deactivated. This affects only the satellite monitor - all other functionalities are not affected. You can find tools for free in the internet, with which you can reconfigure your GPS receiver in such a way that also GSV and GSA sentences will be transmitted.

Q: I have successfully connected my GPS receiver with GPS PAD but in the GPS monitor all satellites are at the same position or in a line. Is this possible?

A: Your GPS is making a cold start. Depending on how long your GPS was switched off, this cold start takes between one minute and half an hour time (if it was switched off for a long time or if you have moved a large distance).

Q: If I switch off the PocketPC, when GPS PAD is still running, it can only be started again with a softreset. Is this a problem of GPS PAD?

A: No, this is a Windows problem which appears with some PocketPCs. If you have established a Bluetooth connection, you must not switch off your PocketPC. First disconnect the Bluetooth connection and then you can switch on and off your PocketPC whenever you want without problems.

Q: The GPS position is inexact or changes very quickly, although I am not moving. What is the problem?

A: GPS shows exactly the data that are received from your GPS receiver. Typically, such problems appear, if only few satellites are visible or if you are in an inner city area with deep street canyons.

Q: Even though I am absolutely sure, that I have recorded a GPS track, I cannot see the data. What I am making wrong?

A: Control if the checkbox **Show track** is activated in the window for managing tracks.

Q: I have recorded a GPS track that is much larger/smaller than the map that I have created. How can I change the map size so that it fits to the size of the recorded track?

A: Save the track in a track file. Close the map and load the saved track again from the track file. The map size will automatically be fitted to the size of the recorded track.

Contact us

We have tried to develop a program that has many functionalities and should be very easy to use. But as developers, we typically have a different view at a program as the users of the program do.

Therefore, we would like to ask you for your help. Tell us how you like the program. Do you have any suggestions of improvement or other comments? Especially you can help us, if you tell us on which hardware you do successfully run GPS PAD. Meanwhile there are existing so many different PocketPCs and GPS devices, that it is not possible for us to test every possible combination. If you tell us the port number and the baud rate of your GPS setting and your Windows version, we will publish that in this handbook to help new users.

If you want to contact us, send us a mail to PPCsoftFACTORY@yahoo.de. We will try to answer your email as soon as possible.

We wish you much fun with GPS PAD!

Yours PPCsoftFACTORY Developing Team