# GPSdash2 *User Manual*

# User's Guide

## *Installation*

Before you can install GPSdash2 on your PocketPC, you have to download it directly to your PDA, your PC or Mac. The recommended source for downloading the latest GPSdash2 installers is <http://files.gpsdash.com>.

Every release of GPSdash2 is offered in three flavours:

1. Self-extracting Executable Installer (PC only)
2. Zip compressed CAB-Archive (PC and Mac)
3. uncompressed CAB-Archive (PocketPC)

### Self-extracting Executable Installer

To install GPSdash2 with this method just download the EXE file to your PC, start it, and follow the instructions. If your PocketPC is connected to your PC and ActiveSync is installed, the installation should finish without the need for additional action.

### Zip compressed CAB-Archive

If you have a Macintosh or just prefer CAB-Archives, download the ZIP, decompress it with your favourite tool (e.g. WinZIP) and copy the contained CAB-Archive directly to your PocketPC. This can be done with ActiveSync or the Windows File-Explorer. On the PocketPC finish the installation by opening the Archive with the PocketPC File Explorer or another file-manager of your choice.

### Uncompressed CAB-Archive

The uncompressed CAB-Archive is meant for direct download to your PocketPC via PocketIE. As this type of the installer is uncompressed and therefore relatively big in size, it is not recommended to use this type of installer in any other scenario.

After the installation has finished, you will find the start icon of GPSdash2 in the "Programs" folder of your "Start Menu". But before you can connect to your GPS receiver, you have to configure it. Read more about this in the "Configure..." section of the reference.

## *Context Menus*

Because all mobile devices have rather small screens and so there is not much space for many buttons or other controls, GPSdash2 makes extensive use of context menus. So whenever you are looking for a command or feature, try to look in the objects (e.g. a chart, a gauge) context menu.

On a traditional PC you can open a context menu by using the right button of your mouse. As there is no mouse on a PocketPC, Microsoft had the idea to offer the stylus based "tap&hold" mechanism. So as the name suggests already, to open a context menu you have to press down the stylus on the screen and hold it for about a second.

## *Importing Maps*

In GPSdash2 you can import and use any maps that are available or can be converted into a raster-image. Popular raster-image formats are GIF, PNG, JPG, TIFF, or BMP. To be able to use such a map on your PocketPC, it has to be converted into a format which is suitable for mobile devices. This conversion can be done with the **GPSdash2 Map Manager** on your PC.

Start the GPSdash2 Map Manager on your PC and use the "Open Map…" command from the "Map" menu to load the map image into the Map-View. To convert the map into the mobile device compatible format, use the "Save for Devices" command. This special version of the map is saved into the "Save for Devices" folder.

The default "Save for Devices" folder – which can be changed via the "Directories…" command in the "Tools" menu - on your PC is

`C:\Documents and Settings\{User Name}\My Documents\GPSdash2\Maps4Devices`

To use the converted maps on your PocketPC you have to copy the contents of the "Maps for Devices" folder into a GPSdash2 map folder on your PocketPC. The default GPSdash2 map folder on your PocketPC is "`\My Documents\GPSdash2\Maps`". However, you can have multiple map folders on your PocketPC and they can also be located on storage cards (SD-Cards, Flash Cards, etc.). To change the default map directory or to add a new one, use the "Add Map Dir…" command from the Map-View's context menu of GPSdash2 on your PocketPC.

*Tip: If you are syncing your files with ActiveSync and you set your "Maps for Devices" directory to reside in the synchronisation sub-tree you do not need to manually copy the maps on your PocketPC – ActiveSync takes care of this for you.*

## Map Calibration

Before you can use a map for position tracking, you have to calibrate it by defining at least two "Reference Points" which are necessary to map the geographical coordinates - provided by your GPS receiver - to Cartesian coordinates which describe a position on a raster-map.

You can do this with the GPSdash2 Map Manager on your PC or in the field with GPSdash2 on your PocketPC. The latter method is described in the following:

To define a "Reference Point" for your already loaded map do the following:

1. Make sure you are connected to your GPS receiver (good reception is important).
2. Move the Position Marker to your current position on the map by tapping with your stylus.
3. Select the "References..." command from the context menu (tap&hold).
4. Enter a name for your Reference Point (optional), tap the "Add" button and save it with "ok".

While the method just described is easy and accurate, you have to physically move to each of your Reference Points. To avoid this, you may also manually provide the geographical

coordinates for your "Reference Points". Just make sure to provide the coordinates in the correct notation. The coordinate notation used by GPSdash2 is selectable in the menu under "Tools → Coordinates".

For more detailed information, please read the Map-View section in the reference.

## Additional Hints

- To get optimal results with the map relative position tracking, the map's scale should be in between 1:10.000 and 1:100.000.
- Accuracy of Reference-Points is crucial for the position tracking feature.
- To get optimal results, try to distribute your "Reference Points" diagonal over the entire map area.
- Two "Reference Points" must not share the same latitude or longitude.

## *Reading Analogue Gauges*

The GPSdash2 Dashboard currently features five analogue gauges:

- Altimeter
- Clock
- Compass
- Speedo
- Satometer
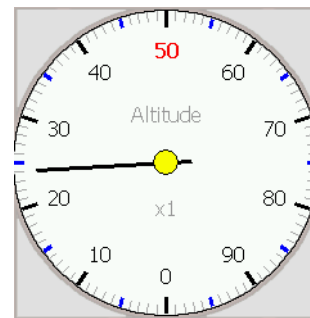


Because the display of the PocketPC is rather small, it is one of the topmost priorities of every developer to keep things concise and simple. Trying to achieve this goal resulted in the actual design of the gauges but made reading them correctly a little bit tricky at first. Although the Altimeter, the Odometer and the Speedo show only one pointer explicitly, they in fact represent two pointer gauges. To keep things clearly arranged, the second pointer is realized by highlighting the corresponding value in the round-labelling of the gauge.

e.g. To represent an altitude of 524m the pointer of the gauge points to 24 and the 50 in the round-labelling is highlighted in red. So to read the altitude you have to calculate 50 times 10 plus 24. For altitudes above 1000, the scale factor rendered below the center of the gauge comes into play.

While this seems to be complicated at first, this solution offers the significant better precision of a two-pointer gauge and avoids overcrowding the gauge-face with a second pointer. With a little practice you be able to read the gauges without a problem. For more specific information on every single gauge please contact the "Dashboard" section in the reference.

# Reference

This reference covers almost all aspects of GPSdash2 in well-structured form.

## *Menu & Toolbar*

## Menu "GPS"

This menu contains all the commands related to your GPS-Receiver.
The available commands/switches are:

- Configure...
- Connect
- Disconnect
- Auto Connect
- About…
- Quit GPSdash2
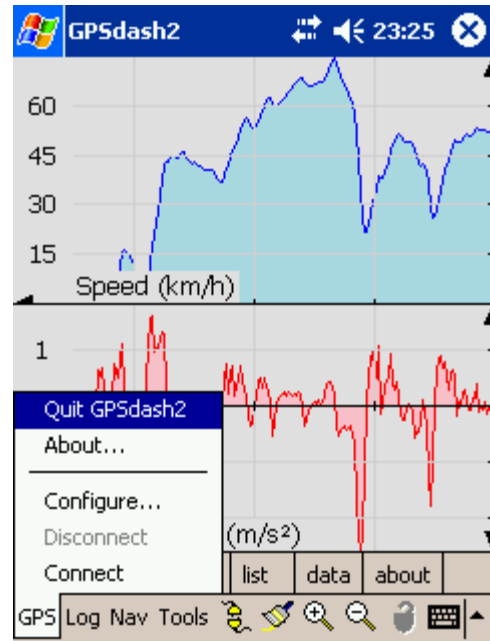
### "GPS → Configure..."

Before you can successfully connect to your GPS-Receiver, you have to specify the correct connection parameters. As GPSdash2 "talks" to the receiver over a serial interface (COM-Port), the essential parameters are:

- Serial Port - the name of the Interface
- Baud Rate - the communication speed
- Protocol - the data protocol

If you do not know these values, you can use the "Auto Detect Settings" button to make GPSdash2 try to automatically detect them.

If the automatic detection fails, you may have a look at the Success-Report-List which is a collection of successfully tested configuration-sets. This list is available on the products official website: http://gpsdash.com

*Note: At the moment, GPSdash2 supports only the NMEA communication protocol. So you don't really have a choice for now.*

#### *Advanced Options*

If you know the chipset of your receiver, make sure to select the corresponding entry from the "Chipset" listbox. If you don't know this technical detail about your receiver, leave the setting at "unspecified" or try to consult the manual/technical specification of your receiver manufacturer.
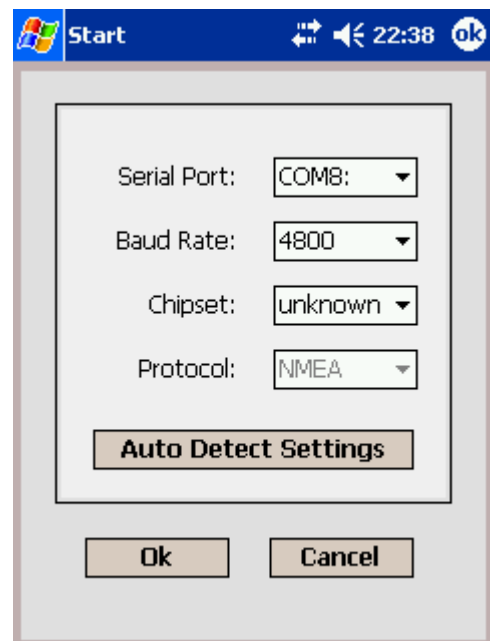
## "GPS → Connect"

After configuration, you can try to connect to your receiver by selecting the "Plain Connect" command. If you get an error message or nothing seems to move, please check your configuration and all physical connections. Also make sure that no other application is blocking the serial port.

## "GPS → Disconnect"

Use this command to disconnect from your receiver. Disconnecting also frees the serial port so other applications may have access.

## "GPS → Auto Connect"

With this switch you can control whether GPSdash should connect to your receiver on program start automatically or not. Be sure to have a working configuration before activating this switch.

## "GPS → About..."

This command opens/selects the GPSdash2 "About" dialog. This dialog displays some info about the software and it's version and is important if you want to register the software. Every customer receives a so called "Registration-Key" which has to be entered and confirmed in this dialog.

## "GPS → Quit GPSdash2"

This command allows you to close GPSdash2 and remove it from memory.

*Note: Taping the X in the upper right corner of a PocketPC application does not remove it from memory.*

## Menu "Log"

If you want to store the data of a trip for later analysis or documentation, you can do this by creating a log-file. The "Log" submenu provides the tools to create and replay log-files. Log-files contain raw data as delivered from your receiver.

The available commands/switches are:

- Create New...
- Stop Logging
- Replay...
- Stop Replay
- Replay Speed

### "Log → Create New..."

To start recording a log-file, select the "Create New..." command and specify where to store the data.

### "Log → Stop Logging"

Select this command to stop the recording of GPS data.

### "Log → Replay..."

This feature allows you to replay a previously created log-file.

### "Log → Stop Replay"

Select this command to stop the replay of a log-file.

### "Log → Replay Speed"

The "Replay Speed" submenu allows you to control the speed when replaying a log-file. You can choose between 100% (real time), 200% (default) , 400%, and unthrottled. If you select unthrottled GPSdash2 is replaying a log as fast as the the CPU of your PocketPC allows it.
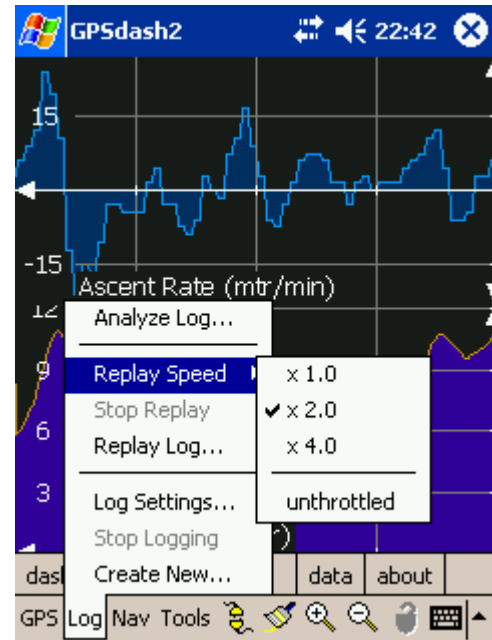
## Menu "Nav"

The "Nav" menu contains the tools to manage the data
needed to support you in questions of navigation.

The available commands/switches are:

- Manage Waypoints…
- Add Waypoint…
- Select Waypoint...
- Manage Routes…
- Add Routepoint…
- Start New Route…
- Select Route…
- Unselect Target(s)
- Previous Target
- Next Target
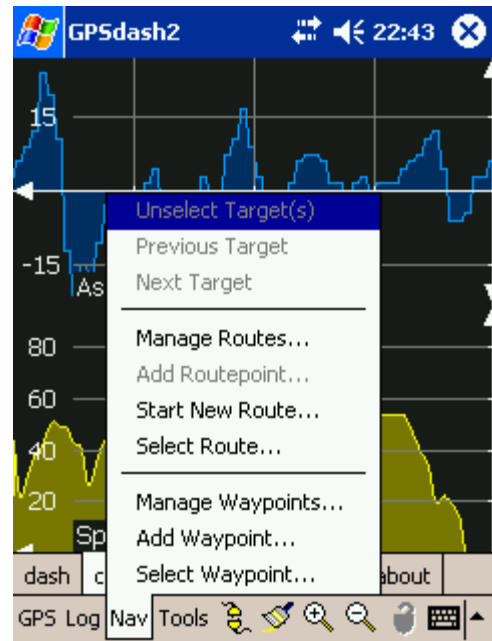
## "Nav → Manage Waypoints..."

This command opens a dialog to manage your waypoint data. The controls in the dialog allow
you add new, update and remove waypoints via the lists context menu. Waypoints are
organized in categories. To add a new category use the "Add New…" command from the
context menu of the Category combo-box.

You can sort the waypoints in a given category by Name, Type, and Distance to your current
location. To do this, tap on the column header. To reverse the order tap on the column header
again.

## "Nav → Add Waypoint..."

Use this command to create a new Waypoint. If you are connected and the receiver provides a
valid fix, the position fields are initialized with the current position. If you re in the Map-
View and have selected a calibrated map, the position fields are initialized with the position as
indicated by the marker. Beside the global position you can specify a radius to describe the
covered area. Whether the radius is measured in meters or feet is selectable via the unit
switches in the "Tools" menu. You may also specify a description and a type for the
waypoint.

## "Nav → Select Waypoint..."

To be supported when navigating to a previously defined waypoint, you have to select it as
your current target. The "Select Waypoint..." command opens a dialog which allows you to do
this and is also useful to browse through your waypoints.

## "Nav → Manage Routes..."

This command opens a dialog to manage your routes. To add or remove a route use the
context menu of the Route combo-box. To manage the routepoints, use the context menu of
the listbox.

### "Nav → Add Routepoint..."

Use this command to add a new routepoint to the currently selected route. If you are connected and the receiver provides a valid fix, the position fields are initialized with the current position. If you re in the Map-View and have selected a calibrated map, the position fields are initialized with the position as indicated by the marker. Beside the global position you can specify a radius to describe the covered area. Whether the radius is measured in meters or feet is selectable via the unit switches in the "Tools" menu. You may also specify a description and a type for the waypoint.

### "Nav → Start New Route…"

Allows you to create a new route and to directly add the it's first routepoint.

### "Nav → Select Route…"

Use this command to tell GPSdash2 which route you want to follow.

### "Nav → Unselect Target(s)…"

Use this command to unselect a previously selected Waypoint or Route.

### "Nav → Next Target"

Use this command to select the next routepoint of a currently active/selected route.

### "Nav → Previous Target"

Use this command to select the previous routepoint of a currently active/selected route.

## Menu "Tools"

The available commands/switches are:

- [Help…](#)
- [Play Sounds](#)
- [Time](#)
- [Units](#)
- [Coordinates](#)
- [Skins…](#)
- [Schemes](#)
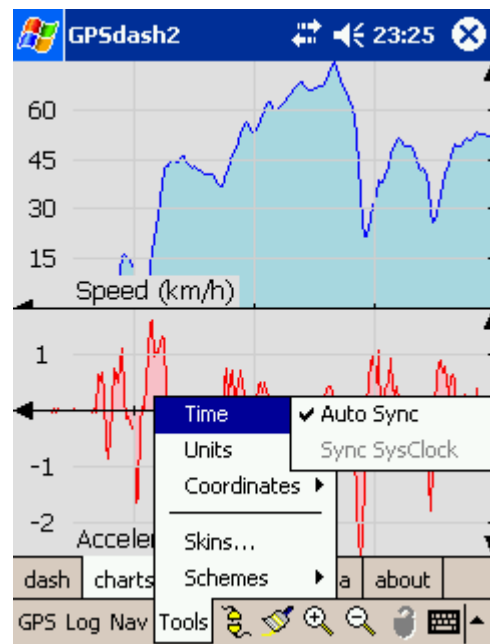
### "Tools → Help…"

Opens this Manual in the Help-Browser of your PocketPC.

### "Tools → Play Sounds"

This switch controls if GPSdash2 should play an audible signal in case of certain events. At the moment, these events are the following:

- GPS receiver manages to receive first valid fix
- GPS receiver loses connection
- Waypoint / Routepoint reached

Which sound samples are to played is controlled in the settings file of your current skin. (Skins\{SkinName}\GPSdash2Skin.xml)

### "Tools → Time"

Activate this switch to get an audible signal whenever your receiver manages to get it's first valid fix or when it looses connection to the satellites.

### *"Tools → Sync SysClock"*

This command allows you to sync the system-time of your PocketPC with the reference time provided by the GPS system. It is only enabled if GPSdash2 is connected and the receiver delivers a valid fix.

### *"Tools → Auto Sync"*

If this switch is enabled, GPSdash2 syncs your system-time whenever your receiver manages to get a valid fix. This happens automatically without any user interaction.

## "Tools → Units"

As even in the 21st century the world is still divided in different zones with different measures, GPSdash2 supports the metric (m, km, km/h), the imperial (feet, miles, mph) and for the sailors the nautic system (nautic miles, knots). It's up to you to choose.

*Note: Selecting "nautic" does not influence the measure for altitude.*

## "Tools → Coordinates"

GPSdash2 supports two coordinate systems which are WGS84 (GPS standard) and UTM. Additionaly, WGS84 is further supported in three different notations as they are DDMMSS.SS, DDMM.MMMM and DD.DDDDDD (D = Degree, M = Minute, S = Second).

## "Tools → Skins…"

With this command you can open the GPSdash2 skin-manager. In the skin-manager you can designate a primary and a secondary skin. You can quickly switch between the primary and the secondary skin by using the Brush-Tool.

## "Tools → Schemes"

The schemes submenu allows you to select from a set of predefined schemes. Via schemes you can control nearly all aspects of GPSdash2. The most important things are which gauges are to be shown in the dashboard and the type of charts in the Chart-View.

To save the current configuration of your Dashboard and the Chart-View, use the "Add New…" command. If you want to delete a scheme, select the corresponding entry from the "Delete" sub-menu.

## The GPSdash2 Toolbar

### Connect-Tool

Use the connect tool to quickly establish a connection to your GPS receiver. If GPSdash2 is connected to your receiver but has not received a valid fix the connection icon is shown in red. When the receiver manages to get a stable connection with at least 3 satellites, the icon changes its colour to green.

### Brush-Tool

By tapping on the brush icon in the toolbar you can switch between the primary and the secondary skin. The primary and the secondary skin are designated via the GPSdash2 Skin-Manager. When in Map-View, tapping the Brush-Tool opens the Select-Map dialog.

### Zooming-Tool

The functionality of the Zooming-Tool is context dependent. If the Dashboard is active, taping the zoom-in button switches the Dashboard to Exclusive-Mode (only one big view of the current main gauge). If the Dashboard is in Exclusive-Mode you may switch back to Normal-Mode by taping the zoom-out button. In Map-View you may use the Buttons to zoom the map freely.

### Padlock-Tool

This tool is only available when the dashboard is active and enables you to lock the dashboard. When the dashboard is locked, the layout of the dashboard is static which means you can not change a gauges position by tapping on it. This is useful if you want to prevent unwanted changes in the dashboards layout.

### Measuring-Tool

GPSdash2 includes many features for which other vendors do charge a much higher price. One of these features is the distance and area measuring tool for calibrated maps. To get a distance for a user-defined path, the following steps have to be taken:

1. Select a map which covers the area of interest in adequate detail/scale.
2. Switch into the "Distance Measuring" mode by tapping the ruler button in the toolbar.
3. Define a path by setting the nodes with the stylus.
4. Get the result by taping the ruler button again.

If you follow these steps, GPSdash2 displays the total length of the path in a popup window. To make GPSdash2 calculate an area for you, the defined path must contain at least 3 nodes and must end in the starting node. In this case GPSdash2 displays the length of the path and the amount of the outlined area.
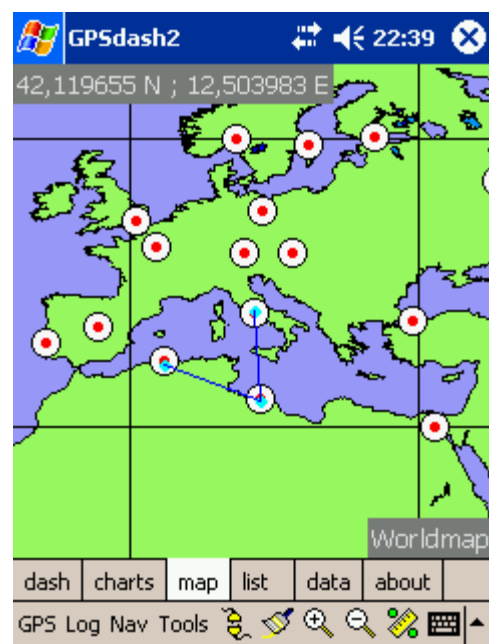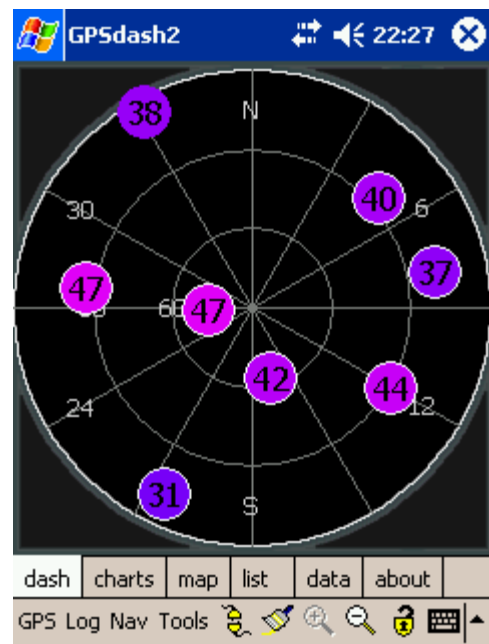
## GPSdash2-Views

To visualize the data from your receiver, GPSdash2 offers five different views:

- Dashboard - shows basic and aggregated data over several gauges
- Chart-View - shows GPS derived data as a function of time
- Map-View - shows your position and other navigational information on a map
- List-View - shows basic GPS data in list form.
- Data-View - shows raw data (NMEA) as it is sent by your receiver

## Dashboard

The GPSdash2 Dashboard currently features 35 gauges which are organized in the following 10 categories:

- Speed
- Acceleration
- Mileage
- Altitude
- Ascent Rate
- Altitude Gain
- Navigation
- Time
- Reception
- Dilution of Position



## General Information

The Dashboard has two layout modes called standard- and exclusive-mode. In standard-mode the Dashboard shows six gauges, whereby the main-gauge has the quadruple size of the other five gauges. You can designate any of the small gauges as main-gauge by simple taping on it. By taping on the main-gauge, you switch the Dashboard to exclusive-mode where the main-gauge is enlarged to cover the whole Dashboard area. To leave exclusive-mode, tap in the Dashboard area again or use the Zooming-Tool in the toolbar.

Every gauge has its own context-menu where you can choose from different measuring system, switch between display modes and specific commands like "Reset Gauge".

Beside this per gauge settings/commands, you can change a gauges type whereby all the gauge types of the same category are available directly. To choose
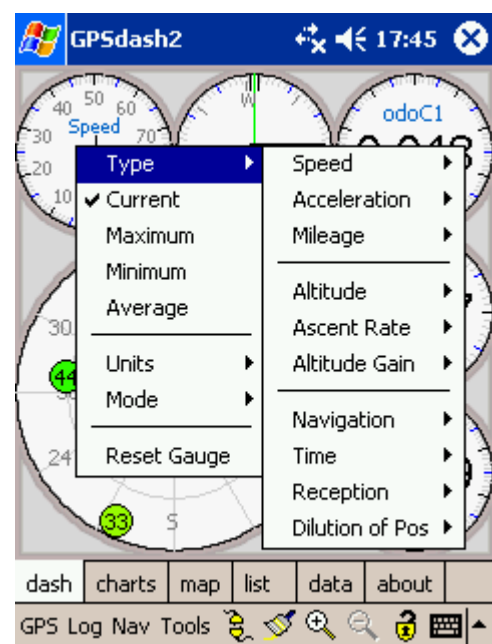
from the gauge types of all available categories, you have to open and choose from the "Type" submenu.

The different GPSdash2 gauge categories will be described somewhat more in the following:

## Speed

This category includes 4 gauge types:

- Current Speed          Shows the current speed
- Maximum Speed       Shows the maximum speed since session start
- Minimum Speed        Shows the minimum speed since session start
- Average Speed         Shows the average speed since session start

Beside the possibility to switch between metric, imperial and nautic mode, technically there is not much to say about the different types of the Speedo.

*One Tip: This gauge is great to check the Speedo of your car. The Speedos of some car models show significant deviation.*

## Acceleration

This category includes 4 gauge types:

- Current Acceleration          Shows the current acceleration
- Maximum Acceleration      Shows the maximum acceleration since session start
- Minimum Acceleration       Shows the minimum acceleration since session start
- Average Acceleration        Shows the average acceleration since session start

## Mileage

The mileage category features 4 distinct odometers:

- Grand Total          A odometer which only counts live data
- Counter1             A general purpose odometer
- Counter2             A general purpose odometer
- Counter3             A general purpose odometer

The "Grand Total" odometer is different from the other counters in that this gauge only counts live data from a GPS receiver. In other words, this gauge does not count data that is replayed from a log-file. To reset a mileage counter, use the "Reset Gauge" command from the gauges context menu.

## Altitude

This category includes 4 gauge types:

- Current Altitude                Shows the current altitude

- Maximum Speed                     Shows the maximum altitude since session start
- Minimum Speed                     Shows the minimum altitude since session start
- Average Speed                     Shows the average altitude since session start

All Altimeters may be used in metric or imperial mode and offer the option to apply a manual correction offset to the geoid-height as reported by the receiver. This is sometimes necessary as the GPS is based on an idealized model which differs more or less from reality. The extent of this error depends on your current position but is nearly constant for small areas.  To specify the correction offset, use the "Corr. Offset…" command from a altimeters context menu.

However, some of the better or more expensive receivers automatically provide such a correction value. This is detected and applied by GPSdash2 (Geoid Separation).

## Ascent Rate

This category includes 4 gauge types:

- Current Ascent Rate               Shows the current altitude
- Maximum Ascent Rate               Shows the maximum altitude since session start
- Minimum Ascent Rate               Shows the minimum altitude since session start
- Average Ascent Rate               Shows the average altitude since session start

*Info: The accuracy of the variometers highly depends on a good to perfect reception and a high quality receiver. In general, altitude related information contains the biggest error of all GPS derived data. Because of this weakness, altitude related data from GPS is usually less accurate than data from barometric gauges.*

## Altitude Gain

This category includes 3 gauge types:

- Absolute Altitude Gain            Shows the absolute altitude gain since session start
- Positive Altitude Gain            Shows the positive altitude gain since session start
- Negative Altitude Gain            Shows the negative altitude gain since session start

## Navigation

The gauges in this category are helpful when navigating to a waypoint or following a route.
:
This category contains 3 gauges:

- Heading                           This gauge represents a GPS based compass
- Distance                          Indicates the distance to currently selected waypoint/routepoint
- ETA                               Estimated Time of Arrival

This electronic compass imitates a normal compass but there is one important difference: The compass data is only valid if your receiver is moving. It is not possible to derive a heading from GPS data if the receiver is stationary. If a waypoint is selected, the compass also features an obtrusive bearing marker to help you finding your target. Find out more about waypoints in the Nav menu section of this reference.

## Time

The Time category features 2 clocks which are based on the very precise GPS reference time – a crucial value in the overall system.

This category includes 2 gauge types:

- Local                  This clock shows the time in your local time zone
- Universal             This clock shows the universal time (UTC)

For the local clock to show the correct time, you have to specify your actual time zone in the clock settings of your PocketPC (Start → Settings → System → Clock).

## Reception

The gauges in this category visualize the reception situation of your receiver. They show the number and the relative position of the satellites in view. Satellites used to acquire the fix are outlined in black. The fill-colour of the circular satellite indicators encode the reception or signal quality.

This category includes 2 gauge types:

- Signal Quality       Every satellite is labelled with its Signal Quality
- Satellite ID         Every satellite is labelled with its unique Satellite ID (PRN –ID)

The Signal Quality is a number in between 0 and 50 whereby 50 indicates optimal signal reception. The Satometer of type "Signal Quality" features this value as explicit labels of the satellites.

## Dilution of Position

The Dilution of Position (DOP) is a value that characterizes the amount of error included in the GPS derived positional data. The DOP is a value in between 0 and 50 whereby the lower the DOP, the lower the error in the data. As a rule of thumb you can say, that a DOP below 10 is ok. Values above 10 indicate rather bad reception. Most of the time, this is caused by obstacles which are blocking the clear view to the sky.

This category includes 4 gauge types:

- Current DOP          Shows the current Dilution of Position
- Maximum DOP          Shows the maximum DOP since session start

- Minimum DOP        Shows the minimum DOP since session start
- Average DOP         Shows the average DOP since session start

For more information on how to read the gauges in analogue mode correctly, please consult the "Reading the Gauges" Quick Guide.

## Chart-View

As a complementary view to the Dashboard, the Chart-View visualizes 2 out of overall 6 GPS derived data values as functions of time.

The plotted data functions are the following:

- Speed
- Acceleration
- Altitude
- Altitude Gain
- Ascent Rate
- Dilution of Position
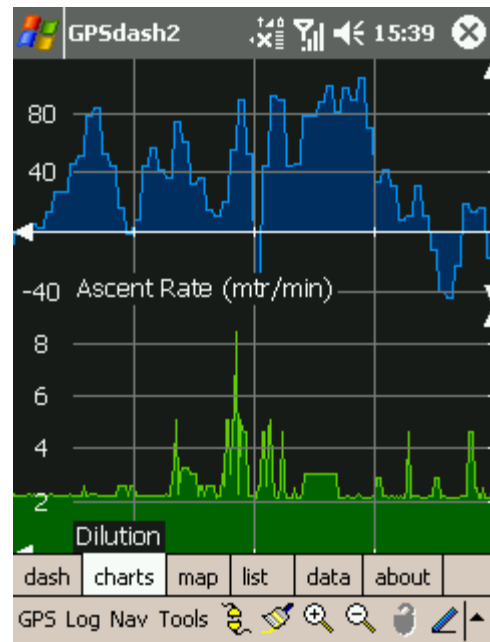
For each of those functions you can freely choose from several time-windows which are grouped into 3 levels of detail. If the data samples from your receiver are sent with an update rate of 1 second per sample, the resulting time-windows are the following:

**LOD-1**
- 1 minute
- 2 minutes
- 4 minutes

**LOD-2**
- 8 minutes
- 16 minutes
- 32 minutes

**LOD-3**
- ~1 hour (64 min)
- ~2 hours (128 min)
- ~4 hours (256 min)

To switch the type of a chart open the chart's context menu and choose the new chart type from the "Type" sub-menu. The measuring system for the chart's scale can be set via the "Units" sub-menu.

To set or switch a chart's time window, you can either use the corresponding commands from the chart's context menu or the Zooming-Tools in the GPSdash2 toolbar. By tapping the Zoom-In button, the time window of both visible charts is cut in half (if possible). The opposite happens if you use the Zoom-Out button.

The "Show" submenu allows you to specify the visibility of some overlay information like the functions name.
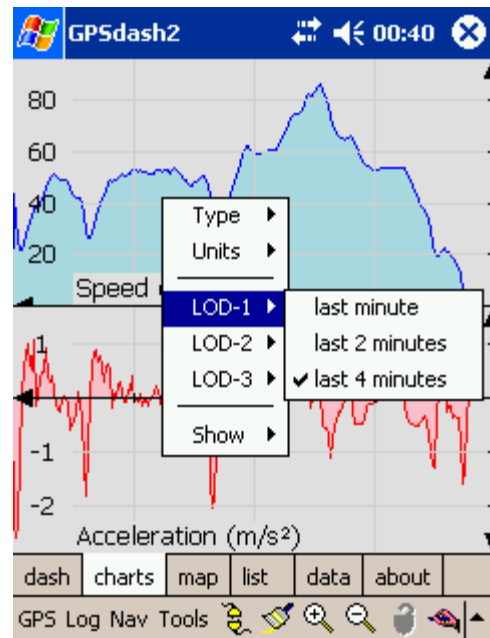
If you tap with your stylus into a chart, GPSdash2 displays the value of the thusly selected data value via a small popup message. With this feature you can find out the exact value of a specific data point if needed.

## Map-View

Almost all commands related to the Map-View are accessible over the Map-Views context menu. Open the context menu by doing a "tap&hold" anywhere in the Map-View window. The available commands/switches are:

- References...
- Select Map...
- Add Map Dir
- Track Position
- Auto Select Map
- Goto Target
- Show
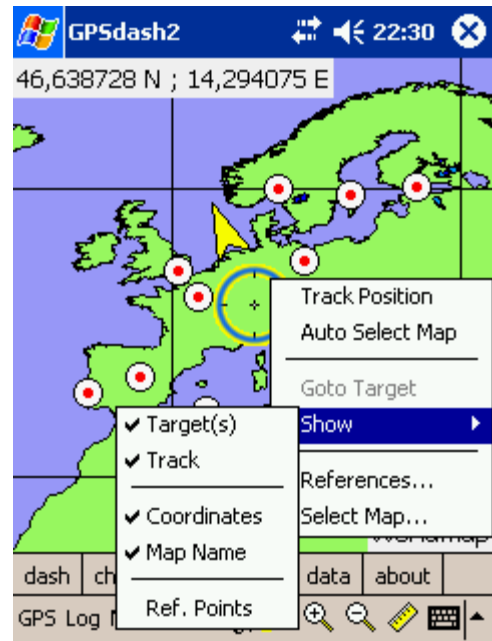
### References...

This command opens a dialog which allows you to manage Reference-Points for the currently loaded map. Reference-Points connect geographical positions with the corresponding points in the map and are necessary for map-calibration. If you have just added a new map, you have to define two Reference-Points to calibrate it. You can define more than two Reference-Points, but in the current implementation, only the first and the last Reference-Point of the list are used. For a step by step instructions please read the "Importing Maps" Quick Guide.

### Select Map...

This command allows you to manually select a map from the list of imported maps. If the track "Track Position" switch is activated you are connected, it makes only sense to select a map that covers your current position or GPSdash2 will automatically switch back to a map that covers. In general it is not advisable to use this command if the "Auto Select Map" switch is activated.

### Add Map Dir...

Use this command to add new map directories. To learn more about the map organization in GPSdash2, please have a look at the "Importing Maps" paragraph in the "Guides" section of this manual.

To remove a map directory, use the context menu of the "Category" listbox in the "Select Map…" dialog.

### Track Position

If GPSdash2 is connected to your receiver and you want to see your current position on a map, just activate this switch and the Map-View position marker will work as indicator. If your position is not covered by your current map, GPSdash2 will try to switch to the map with the highest scale which does. As a fallback, this may also be the world map.

## Auto Select Map

While the "Track Position" switch causes GPSdash2 to automatically change the current map only if the current position is not covered anymore, the "Auto Select Map" switch checks for changing to a "better" map on every fix that is coming in from your receiver. In this context, "better" means a map with higher scale (1:10000 > 1:50000). So if you have an overview map that covers a large area and you enter a sub-area for which a map with higher scale is available, GPSdash2 will automatically switch to this "better" map if the "Auto Select Map" switch is enabled.

## Goto Target

If a waypoint or route is currently selected, you can use this command to move the position marker to the position of the waypoint or the next routepoint. This only works properly if the "Track Position" switch is deactivated. Otherwise the marker will jump back to your current position as soon as the next fix arrives from the receiver.

## Show

The "Show" submenu allows you to control the display of some additional pieces of information in the Map-View:

- **Show → Waypoints** - This switch control's wheter waypoint symbols are rendered or not.
- **Show → Track** - If this switch is enabled, a trace of your track is rendered as an map overlay.
- **Show → Coordinates** - Controls the rendering of the coordinates of the position marker in the upper-left corner of the Map-View. If this is enabled on an uncalibrated map, the coordinate of the pixel in the map is displayed instead.
- **Show → Bearing** - If a waypoint is selected and this switch is activated, the absolute bearing, the relative bearing to your current heading and the distance to the waypoint are displayed in the upper-left corner of the Map-View.
- **Show → Mapname** - If enabled, the user definable name of a map is shown in the lower-right corner of the Map-View.
- **Show → Ref. Points** - If enabled, the reference points used to calibrate this map are marked on the map.

## List-View

The List-View presents all the GPS derived data in a comprehensive list.

## Data-View

This view of GPSdash2 enables you to take a look at the raw GPS data as delivered by your receiver. This facility is mainly for debugging and to provide interested users a look at the data. The view contains a window in which a history of the last $n$ GPS records is shown. You can control the $n$ by selecting one of the predefined values from the "History Size" listbox. The checkboxes work as filter and control which type of GPS records are to be shown.
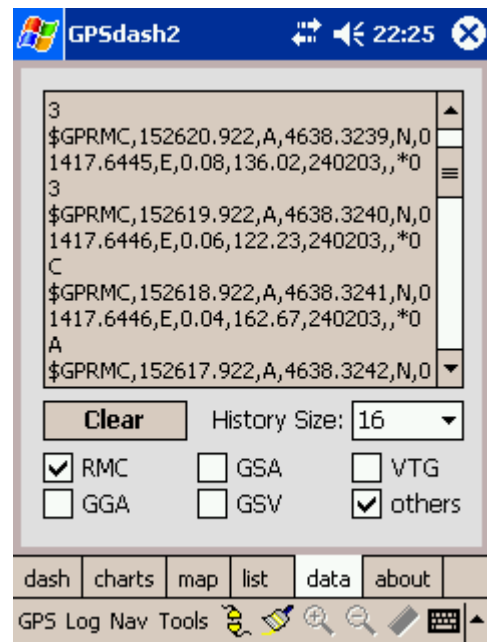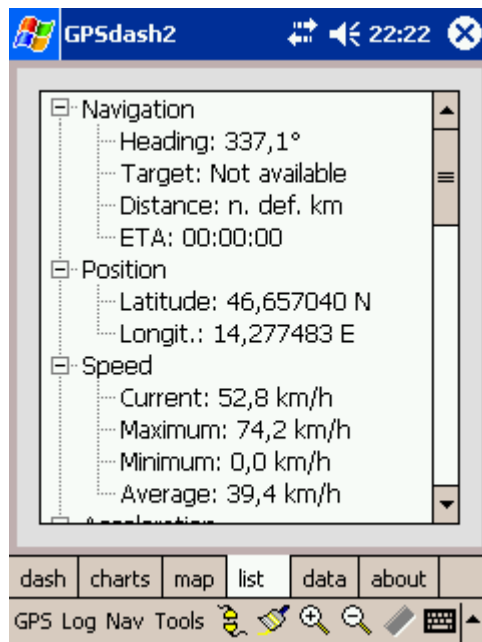
# Troubleshooting

- **I do not know the configuration values for my PPC / Receiver combination. What should I do?**
  - Try to use the „Auto Detect Settings" Button in the GPS configuration dialog to make GPSdash2 search for the correct communication parameters.
  - Have a look at the Success-Report-List. Maybe another user has already provided the correct parameters to this list.
  - Try to consult the manual of your GPS receiver.

- **I think I know the correct port and speed, but trying to connect always yield's** `"Failed to open COM Port."`
  - The access to a COM-port is mutual exclusive which means, that only one program may have access to the receiver at once.
  - If you are using TomTom, please try the following:
    - § On the PocketPC, uninstall the TomTom ~GPS application (that and only that one)
    - § Don't do it via the PC, do it on the PDA directly
    - § The uninstall routine will ask for a soft reset. After that, everything (including TomTom) will work
  - Most probably another program or driver is blocking the port.

- **I am able to connect, but none or only a few gauges seem to work. What should I do?**
  - Make sure that your receiver is configured to use the NMEA protocol and to output GGA, RMC, GSA and GSV records. Most receiver manufacturers provide a free tool to do this.

- **GPSdash2 is crashing on start-up or shortly afterwards. What is wrong?**
  - Please install the Service Pack 3 of the Microsoft .Net Compact Framework
  - You can download this SP3 from <http://files.gpsdash.com>

# Appendix

## *Main Configuration File (GPSdash2Settings.xml)*

Full Path: "\My Documents\GPSdash2\GPSdash2Settings.xml"

```xml
<GPSdash2>

      <RegistrationKey>1234567890</RegistrationKey>

      <Skins>
            <SkinDirectory>\My Documents\GPSdash2\Skins</SkinDirectory>
            <CurrentSkin>PrimarySkin</CurrentSkin>
            <PrimarySkin>Classic</PrimarySkin>
            <SecondarySkin>NightView</SecondarySkin>
      </Skins>

      <Dashboard locked="False" exclusive="False">
            <Gauge1 type="Speedo" reading="Current" system="Metric"
mode="Analog" />
            <Gauge2 type="Altimeter" reading="Current" system="Metric"
mode="Digital" />
            <Gauge3 type="Odometer" reading="Counter1" system="Metric" />
            <Gauge4 type="Navigometer" reading="Heading" system="Metric"
mode="Analog" />
          <Gauge5 type="SatView" reading="SignalQuality" />
          <MainGauge type="Clock" reading="LocalTime" mode="Digital" />
      </Dashboard>

      <Charts>
            <Chart1 type="Speed" system="Metric" />
            <Chart2 type="Acceleration" system="Metric" />
      </Charts>

      <MapView>
            <InitialPosition longitude="14.253428" latitude="46.661512"
elevation="455" />

            <MapDirectories>
                  <Directory>\My Documents\GPSdash2\Maps</Directory>
            </MapDirectories>
      </MapView>

      <ListView>
            <Node type="Navigation" system="Metric" />
            <Node type="Position" system="WGS84" format="DDD.DDDDDD" />
            <Node type="Speed" system="Metric" />
            <Node type="Acceleration" system="Metric" />
            <Node type="Mileage" system="Metric" />
            <Node type="Altitude" system="Metric" />
            <Node type="Ascent Rate" system="Metric" />
            <Node type="Altitude Gain" system="Metric" />
            <Node type="Reception" />
            <Node type="Dilution of Position" />
            <Node type="Time" />
      </ListView>

      <DataView historySize="16">
            <Record type="RMC" checked="False" />
            <Record type="GGA" checked="False" />
            <Record type="GSA" checked="False" />
```

```
            <Record type="GSV" checked="False" />
            <Record type="VTG" checked="True" />
            <Record type="Others" checked="True" />
     </DataView>


     <!--
     <GPS>
            <SerialPort>COM5:</SerialPort>
            <BaudRate>4800</BaudRate>
            <Chipset>SIRF</Chipset>
            <Protocol>NMEA</Protocol>
     </GPS>
     -->


     <DataAggregatorSpeed>
            <MileageCounterTotal value="0" />
            <MileageCounter1 value="0" />
            <MileageCounter2 value="0" />
            <MileageCounter3 value="0" />
     </DataAggregatorSpeed>


     <DataAggregatorAltitude>
            <CorrectionOffset value="0" />
     </DataAggregatorAltitude>


     <Log>
            <Record type="RMC" rate="0" />
            <Record type="GGA" rate="0" />
            <Record type="GSA" rate="0" />
            <Record type="GSV" rate="0" />
            <Record type="VTG" rate="0" />
            <Record type="Others" rate="0" />
     </Log>


     <Tools>
            <AutoSyncTime checked="False" />
            <Coordinates system="WGS84" format="DDD.DDDDDD" />
     </Tools>


     <Navigation>

            <WaypointDirectories>
                   <Directory>\My Documents\GPSdash2\Waypoints</Directory>
            </WaypointDirectories>
            <RouteDirectory>\My Documents\GPSdash2\Routes</RouteDirectory>
            <SymbolDirectory>\My
Documents\GPSdash2\Symbols</SymbolDirectory>

            <WaypointTypes>
                   <Type>Airport</Type>
                   <Type>Amusement Park</Type>
                   <Type>Bank</Type>
                   <Type>Bar</Type>
                   <Type>Beach</Type>
                   <Type>Bell</Type>
                   <Type>Boat Ramp</Type>
                   <Type>Campground</Type>
                   <Type>Car</Type>
                   <Type>Cemetery</Type>
                   <Type>Church</Type>
                   <Type>Circle with X</Type>
                   <Type>City</Type>
                   <Type>Danger Area</Type>
```

```
                    <Type>Diamond Red</Type>
                    <Type>Diamond Green</Type>
                    <Type>Diamond Blue</Type>
                    <Type>Diamond Yellow</Type>
                    <Type>Diamond White</Type>
                    <Type>Diver Down</Type>
                    <Type>Fishing Area</Type>
                    <Type>Forest</Type>
                    <Type>Gas Station</Type>
                    <Type>Geocache</Type>
                    <Type>Geocache found</Type>
                    <Type>Golf Course</Type>
                    <Type>Green Square</Type>
                    <Type>Heliport</Type>
                    <Type>Marina</Type>
                    <Type>Medical Facility</Type>
                    <Type>Museum</Type>
                    <Type>Parachute Area</Type>
                    <Type>Park</Type>
                    <Type>Parking Area</Type>
                    <Type>Pharmacy</Type>
                    <Type>Post Office</Type>
                    <Type>School</Type>
                    <Type>Shipwreck</Type>
                    <Type>Stadium</Type>
                    <Type>Skull and Crossbones</Type>
                    <Type>Telephone</Type>
                    <Type>Waypoint</Type>
                </WaypointTypes>

        </Navigation>

</GPSdash2>
```

## *Schemes Configuration File (GPSdash2Schemes.xml)*

Full Path: "\My Documents\GPSdash2\GPSdash2Schemes.xml"

```
<GPSdash2Schemes>

     <Scheme name="Classic">

          <Dashboard locked="False" exclusive="False">
                <Gauge1 type="Speedo" reading="Current" />
                <Gauge2 type="Altimeter" reading="Current" />
                <Gauge3 type="SatView" reading="SignalQuality" />
                <Gauge4 type="Clock" reading="LocalTime" mode="Analog" />
                <Gauge5 type="Odometer" reading="TotalCounter" />
                <MainGauge type="Navigometer" reading="Heading" />
          </Dashboard>

          <Charts>
                <Chart1 type="Speed" lod="0" />
                <Chart2 type="Altitude" lod="0" />
          </Charts>

     </Scheme>

     <Scheme name="Speed">

          <Dashboard locked="False" exclusive="False">
                <Gauge1 type="Speedo" reading="Minimum" />
                <Gauge2 type="Speedo" reading="Maximum" />
                <Gauge3 type="Accelerometer" reading="Average" />
                <Gauge4 type="Accelerometer" reading="Maximum" />
                <Gauge5 type="Accelerometer" reading="Minimum" />
                <MainGauge type="Speedo" reading="Current" />
          </Dashboard>

          <Charts>
                <Chart1 type="Speed" lod="0" />
                <Chart2 type="Acceleration" lod="0" />
          </Charts>

     </Scheme>

     <Scheme name="Altitude" exclusive="False">

          <Dashboard locked="False">
                <Gauge1 type="Altimeter" reading="Minimum" />
                <Gauge2 type="Altimeter" reading="Maximum" />
                <Gauge3 type="Gainometer" reading="Positive" />
                <Gauge4 type="Gainometer" reading="Absolute" />
                <Gauge5 type="Gainometer" reading="Negative" />
                <MainGauge type="Altimeter" reading="Current" />
          </Dashboard>

          <Charts>
                <Chart1 type="Altitude" lod="0" />
                <Chart2 type="AltitudeGain" lod="0" />
          </Charts>

     </Scheme>
```

```
        <Scheme name="Reception" exclusive="False">

                <Dashboard locked="False">
                        <Gauge1 type="Dilutiometer" reading="Minimum" />
                        <Gauge2 type="Dilutiometer" reading="Average" />
                        <Gauge3 type="Dilutiometer" reading="Maximum" />
                        <Gauge4 type="Dilutiometer" reading="Current" />
                        <Gauge5 type="Clock" reading="LocalTime" mode="Analog" />
                        <MainGauge type="SatView" reading="SignalQuality" />
                </Dashboard>

                <Charts>
                        <Chart1 type="Dilution" lod="0" zoom="4" />
                        <Chart2 type="Dilution" lod="0" />
                </Charts>

        </Scheme>

        <Scheme name="Navigation">

                <Dashboard locked="False" exclusive="False">
                        <Gauge1 type="Navigometer" reading="Distance" />
                        <Gauge2 type="Navigometer" reading="ETA" />
                        <Gauge3 type="SatView" reading="SignalQuality" />
                        <Gauge4 type="Clock" reading="LocalTime" mode="Analog" />
                        <Gauge5 type="Speedo" reading="Current" />
                        <MainGauge type="Navigometer" reading="Heading" />
                </Dashboard>

                <Charts>
                        <Chart1 type="Speed" lod="0" />
                        <Chart2 type="Dilution" lod="0" />
                </Charts>

        </Scheme>

</GPSdash2Schemes>
```

## *Skin Configuration File (GPSdash2Skin.xml)*

Full Path: "\My Documents\GPSdash2\Skins\Classic\GPSdash2Skin.xml"

```
<GPSdash2Skin name="Classic">

      <GeneralStyle image="BgGeneral.gif" forecolor="000000"
backcolor="f0f0f0" />

      <Sounds>
            <ConnectionEstablished file="\Windows\notify.wav" />
            <ConnectionLost file="\Windows\online.wav" />
            <TargetReached file="\Windows\Alarm1.wav" />
      </Sounds>

      <Dashboard>

            <BackgroundStandard image="BgDashboardStandard.gif" />
            <BackgroundExclusive image="BgDashboardExclusive.gif" />

            <Gauges>

                  <Speedo>

                        <Caption color="0066cc" />
                        <DigitalValue color="000000" />
                        <UnitString color="0066cc" />

                        <ScaleLabel color="808080" />
                        <ScaleTick1 color="000000" />
                        <ScaleTick2 color="0000ff" />
                        <ScaleTick3 color="d3d3d3" />

                        <Pointer1 color="000000" />
                        <Pointer2 color="ff0000" />
                        <CenterCircle color="ffff00" outline="000000" />

                  </Speedo>

                  <Accelerometer>

                        <Caption color="0066cc" />
                        <DigitalValue color="000000" />
                        <UnitString color="0066cc" />

                        <ScaleLabel color="808080" />
                        <ScaleTick1 color="000000" />
                        <ScaleTick2 color="0000ff" />
                        <ScaleTick3 color="d3d3d3" />

                        <Pointer1 color="000000" />
                        <Pointer2 color="ff0000" />
                        <CenterCircle color="ffff00" outline="000000" />

                  </Accelerometer>

                  <Odometer>

                        <Caption color="0066cc" />
                        <DigitalValue color="000000" />
```

```
                                <UnitString color="0066cc" />

                                <ScaleLabel color="808080" />
                                <ScaleTick1 color="000000" />
                                <ScaleTick2 color="0000ff" />
                                <ScaleTick3 color="d3d3d3" />

                                <Pointer1 color="000000" />
                                <Pointer2 color="ff0000" />
                                <CenterCircle color="ffff00" outline="000000" />

                </Odometer>

                <Altimeter>

                                <Caption color="0066cc" />
                                <DigitalValue color="000000" />
                                <UnitString color="0066cc" />

                                <ScaleLabel color="808080" />
                                <ScaleTick1 color="000000" />
                                <ScaleTick2 color="0000ff" />
                                <ScaleTick3 color="d3d3d3" />

                                <Pointer1 color="000000" />
                                <Pointer2 color="ff0000" />
                                <CenterCircle color="ffff00" outline="000000" />

                </Altimeter>

                <Variometer>

                                <Caption color="0066cc" />
                                <DigitalValue color="000000" />
                                <UnitString color="0066cc" />

                                <ScaleLabel color="808080" />
                                <ScaleTick1 color="000000" />
                                <ScaleTick2 color="0000ff" />
                                <ScaleTick3 color="d3d3d3" />

                                <Pointer1 color="000000" />
                                <Pointer2 color="ff0000" />
                                <CenterCircle color="ffff00" outline="000000" />

                </Variometer>

                <Gainometer>

                                <Caption color="0066cc" />
                                <DigitalValue color="000000" />
                                <UnitString color="0066cc" />

                                <ScaleLabel color="808080" />
                                <ScaleTick1 color="000000" />
                                <ScaleTick2 color="0000ff" />
                                <ScaleTick3 color="d3d3d3" />

                                <Pointer1 color="000000" />
                                <Pointer2 color="ff0000" />
                                <CenterCircle color="ffff00" outline="000000" />

                </Gainometer>
```

```
<Dilutiometer>

      <Caption color="0066cc" />
      <DigitalValue color="000000" />
      <UnitString color="0066cc" />

      <ScaleLabel color="808080" />
      <ScaleTick1 color="000000" />
      <ScaleTick2 color="0000ff" />
      <ScaleTick3 color="d3d3d3" />

      <Pointer1 color="000000" />
      <Pointer2 color="ff0000" />
      <CenterCircle color="ffff00" outline="000000" />

</Dilutiometer>

<SatView>

      <Caption color="0066cc" />
      <DigitalValue color="000000" />
      <UnitString color="0066cc" />

      <ScaleLabel color="808080" />
      <ScaleTick1 color="000000" />
      <ScaleTick2 color="0000ff" />
      <ScaleTick3 color="d3d3d3" />

      <ScaleGrid color="d3d3d3" />

      <SatLabel color="000000" />
      <SatOutline color="000000" />

      <SatBackgroundSpectrum>
            <Color value="ff0000" />
            <Color value="ff6600" />
            <Color value="ffff00" />
            <Color value="66ff00" />
            <Color value="00ff00" />
      </SatBackgroundSpectrum>

</SatView>

<Clock>

      <Caption color="0066cc" />
      <DigitalValue color="000000" />
      <UnitString color="0066cc" />

      <ScaleLabel color="808080" />
      <ScaleTick1 color="000000" />
      <ScaleTick2 color="0000ff" />
      <ScaleTick3 color="d3d3d3" />

      <HourPointer color="ff0000" />
      <MinutePointer color="0000ff" />

      <SecondPointer color="000000" />

      <CenterCircle color="ffff00" outline="000000" />
```

```
                </Clock>

                <Navigometer>

                        <Caption color="0066cc" />
                        <DigitalValue color="000000" />
                        <UnitString color="0066cc" />

                        <ScaleLabel color="808080" />
                        <ScaleTick1 color="000000" />
                        <ScaleTick2 color="0000ff" />
                        <ScaleTick3 color="d3d3d3" />

                        <HouseMarker color="000000" />
                        <HeadingLine color="00ff00" />
                        <NeedleSouth color="ff0000" />
                        <NeedleNorth color="0000ff" />
                        <NeedleOutline color="000000" />

                        <OrientationTicks color="808080" />
                        <OrientationLabels color="808080" />

                        <BearingBackgroundSpectrum>
                                <Color value="ff0000" />
                                <Color value="ffff00" />
                                <Color value="99ff00" />
                                <Color value="66ff00" />
                                <Color value="00ff00" />
                        </BearingBackgroundSpectrum>
                        <BearingOutline color="808080" />

                </Navigometer>

        </Gauges>

</Dashboard>

<Charts>

        <Speed>

                <Background color="e0e0e0" />

                <ScaleLabel color="000000" />
                <ScaleGrid color="D3D3D3" />

                <FunctionEdge color="0000ff" />
                <FunctionFace color="add8e6" />

        </Speed>

        <Acceleration>

                <Background color="e0e0e0" />

                <ScaleLabel color="000000" />
                <ScaleGrid color="D3D3D3" />

                <FunctionEdge color="ff0000" />
                <FunctionFace color="ffc0cb" />

        </Acceleration>
```

```
<Altitude>

        <Background color="e0e0e0" />

        <ScaleLabel color="000000" />
        <ScaleGrid color="D3D3D3" />

        <FunctionEdge color="00aa00" />
        <FunctionFace color="a4ffa4" />

</Altitude>

<AscentRate>

        <Background color="e0e0e0" />

        <ScaleLabel color="000000" />
        <ScaleGrid color="d3d3d3" />

        <FunctionEdge color="3366ff" />
        <FunctionFace color="ccff66" />

</AscentRate>

<AltitudeGain>

        <Background color="e0e0e0" />

        <ScaleLabel color="000000" />
        <ScaleGrid color="d3d3d3" />

        <FunctionEdge color="ff6600" />
        <FunctionFace color="ffcc99" />

</AltitudeGain>

<Dilution>

        <Background color="e0e0e0" />

        <ScaleLabel color="000000" />
        <ScaleGrid color="D3D3D3" />

        <FunctionEdge color="9933ff" />
        <FunctionFace color="ff99ff" />

</Dilution>

    </Charts>

</GPSdash2Skin>
```