

# Use and Management of GPS Tutorial

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The Tumonz GPS manager interacts in tandem with Tumonz and accesses & manages your GPS data externally to Tumonz. The GPS manager will communicate directly with your GPS and import waypoints, routes and tracks. These are saved in a generic format (GPX) within your chosen folder structure. As such your GPS data can be viewed with other applications besides Tumonz. Map objects on the Tumonz map can be directly exported to the GPS manager and from here uploaded to your GPS. If you have a web connection you can link directly to the APRS radio network and view live the location of mobile and static units using the APRS network.

GPS is covered under the Menu/Tools/GPS Manager User Guide topic.

## An Overview of the GPS Manager

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The GPS Manager provides a very transparent view of your GPS data. Firstly, GPS data is managed in a typical folder structure of Waypoints, Routes and Tracks. This folder structure is saved to file and you can have as many files as you like. All you need to do is open them for any session or create and save them. Within a folder of Waypoints you can have many individual waypoints. Within a folder of Routes or Tracks you can have many individual routes and tracks (each is of course simply just a collection of Waypoints). When you have your Waypoints folder selected or an individual route or track selected you will see in the Waypoint Table all the individual Waypoints. Because a Waypoint can contain a great deal more information than just identity and coordinates there is another table providing all the detail for any selected Waypoint (ie selected in the Waypoint table). The GPS Manager has a conventional menu allowing you to open and save files and so on. This structure is simple and very transparent.

In addition to the data folder structure and data table there are 4 main types of functions that can be initiated by selecting any of the 4 main buttons on the GPS Interface. These buttons are:

1. Connect to GPS
2. Load & Save files
3. Live Tracking
4. Settings

Your GPS manager will allow you to download from your GPS, Upload details of the Tumonz map to your GPS, reposition GPS data using the TUMONZ map, plot a course on the Tumonz map, track yourself live on the map, and also connect to the APRS network and do some live tracking of other parties.

### Purpose

To use a handheld GPS with TUMONZ including: upload, download, live tracking and managing downloaded information.

### How does TUMONZ interact with GPS?<sup>1</sup>

Garmin, Magellan and NMEA interfaces are supported.

The Garmin and Magellan interfaces will allow '**Live Tracking**', '**Uploading**' and '**Downloading**' of waypoints, routes and tracks to and from your GPS. The GPS Manager provides the permanent interface to store and manage your GPS information.

TUMONZ will also allow you to connect live to your GPS and will display your current position.

The NMEA 0183 interface allows you to '**Live track**' yourself on the map.

TUMONZ supports the NMEA 0183 interface standard (version 2.0 or later) that is supported by nearly all GPS units.

### Some useful information prior to using GPS with TUMONZ

- If you are using either a Garmin or Magellan GPS unit, you should use their proprietary interface for live tracking and uploading/downloading of waypoints, routes, and tracks.
- Practically speaking this means setting the "Interface" option to Garmin (could also be Garmin/Garmin) within a Garmin GPS and by setting the NMEA option to OFF, within the set-up menus of the Magellan GPS units.
- Transfer of all GPS data is performed using the WGS84 datum. Accordingly, set TUMONZ to this datum prior to uploading and downloading. This setting is set directly from the Tumonz Status bar at the bottom of the Tumonz screen or can be changed in the Settings window, press **F10** to access.
- The NMEA interface can be used with other types of GPS to allow '**Live Tracking**' only.

**Important:** Make sure that both TUMONZ and the GPS are using the WGS84 datum before transferring information to ensure that the waypoints or routes are not offset.

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<sup>1</sup> Installation of Tumonz Standard v2.00 is assumed in this tutorial.

## Using the GPS Manager in TUMONZ

To open the *GPS Manager* in TUMONZ, click on **Tools** on the menu bar and select **GPS Manager** from the drop down list. Alternatively the quick key for the GPS manager is **Ctrl+Alt+G**. The following window will appear.

## The GPS Manager Interface

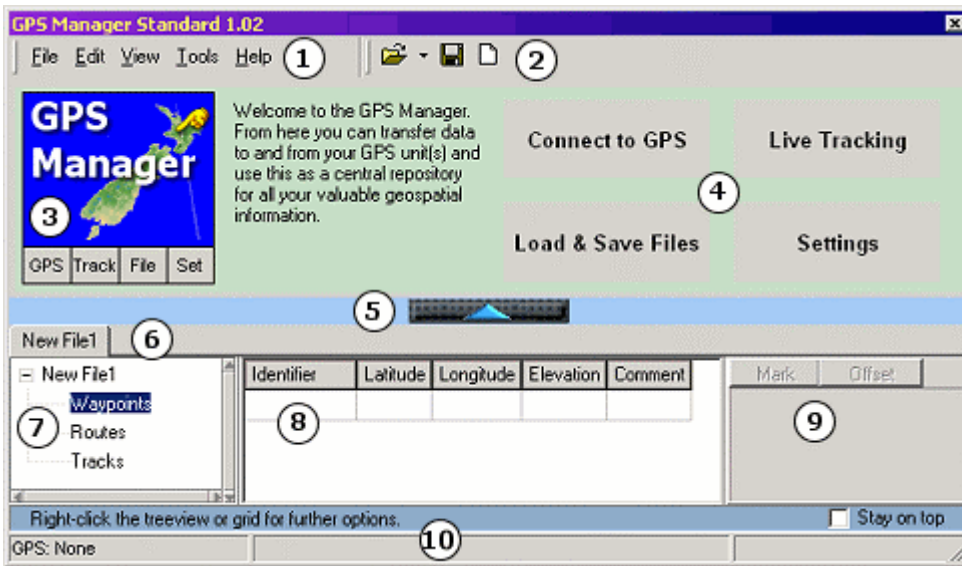


Image 1

1. Menu bar
2. Toolbar (optional and customisable)
3. Quick access links to all features
4. Main menu buttons to all features
5. Show/Hide Main menu buttons and Quick access links.
6. File Tabs (one for each file currently open in the GPS )
7. GPS Folders; Files and the main nodes or folders for GPS data types (i.e. folders for Waypoints, Routes & Tracks)
8. Waypoint Table
9. Waypoint Detail with Mark & Offset Buttons
10. Status Bar – Shows connected GPS.

## The GPS Manager Menu Bar

<b>File</b>	<b>Open File</b>	Opens a GPX file.	
	<b>Import</b>		
	<b>New File</b>	Creates a new GPX file.	
	<b>Save File</b>	Saves the currently active file.	
	<b>Save File As</b>	Saves a copy of the currently active file.	
	<b>Close File</b>	Closes the currently active file, will prompt for save.	
	<b>Recent</b>	Provides a quick list of recently open files to reopen.	
	<b>Exit</b>	Closes the GPS Manager. Remember to save all files before closing.	
	<b>Edit</b>	<b>Paste</b>	Pastes NMEA or APRS files from the clipboard data into the currently active file within the GPS Manager.
		<b>Toolbar</b>	Displays the Toolbar.
<b>Status Bar</b>		Displays the Status Bar	
<b>View</b>	<b>Customize Toolbar</b>	Gives you the ability to change the functions available on the toolbar and change the way the toolbar looks.	
	<b>Tools</b>		
	<b>Add/Remove Waypoint Fields</b>	Use this tool to add your own custom field to all you waypoint data. Applies to any point stored in any file, so can be quite handy for adding additional information to any point reference.	
<b>Help</b>	<b>About GPS Manager Standard</b>	Gives you information about the GPS Manager and the company that developed it.	

## Accessing the features of the GPS Manager



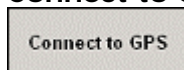
Switch between:

Settings  
Load & Save Files  
Live Tracking  
Connect to GPS

There are four main features to the GPS Manager. Clicking on the small square buttons shown in the image to the left will give you direct access to any of the four main features. You can switch between these features at any time.

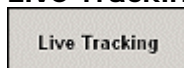
This is provided as an alternative to clicking the four (4) large main menu buttons shown below.

### Connect to GPS:



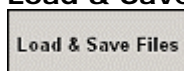
Allows the GPS Manager to automatically scan your com-ports to find and connect to your GPS unit. Once found, you will be able to upload and download all your waypoints, routes and tracks between your GPS unit and the GPS Manager.

### Live Tracking:



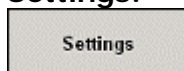
Allows the GPS Manager to automatically scan your com-ports to find and connect to your GPS unit. Once found, you will be able to live track your current position on the TUMONZ map.

### Load & Save Files:



Gives you access to Create New, Save Current and Load Previous Files to and from your computer. These options are also available in 'File' on the menu bar.

### Settings:

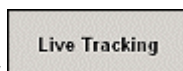


Lets you customise and set preferences for the way the GPS Manager handles all the GPS data.

## Setting up your GPS Unit in the GPS Manager



or

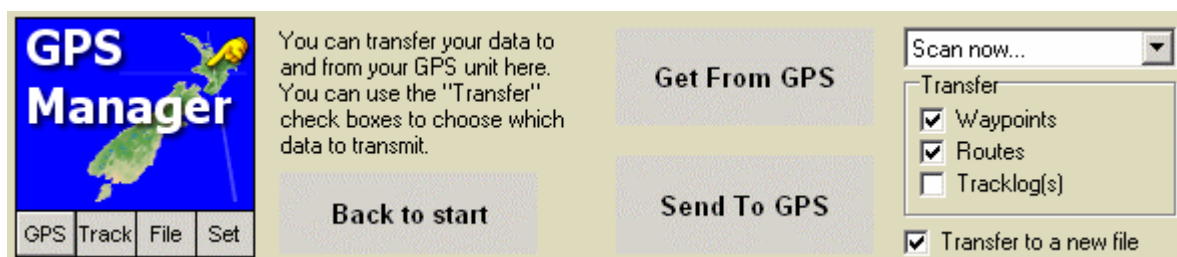


To set up and connect to a GPS unit, press the '**Connect to GPS**' or the '**Live Tracking**' button. If for example you press '**Connect to GPS**' the following image will replace the one shown in *Image 1*.

This will automatically find and configure your GPS unit, providing the GPS unit is connected to the computer and switched on.

**If your GPS does not appear in the drop down box shown in Image 2 (Highlighted Blue) then:**

1. Check to make sure your GPS is switched on.
2. Check your GPS is connected to your computer.
3. Make sure if your GPS unit is a Garmin that you set it to the native interface, Garmin / Garmin. You cannot download anything from your GPS without setting this first.
4. Click on the drop down arrow and select '**Scan Now**' from the list.



### Image 2

Once your GPS is showing in the list you can:

## Download data from GPS

You can download waypoints, routes, or the tracklog(s) from your GPS into the GPS Manager using four (4) simple steps.

1. Click on the **'Connect to GPS'** button on either the main menu buttons or quick link access buttons.
2. Check which type of GPS data you wish to download from the Transfer section of this panel, i.e. waypoints, routes and/or tracklog(s). You must have at least one of these types checked, and can have any combination or all of them checked to download.
3. If you wish to download your GPS data into a new file, check the **'Transfer to a new file'** box.  
Note: This box is checked by default. If you would like to download the selected types into an existing file, make sure the box is unchecked and you have selected the file from the file tabs.
4. Click the **'Get From GPS'** button.

Get From GPS

All GPS data belonging to the selected GPS data type will be downloaded from your GPS into the GPS Manager.  
You can now view and edit the information in the GPS Manager.

## Upload data to GPS

You can upload the complete set of waypoints, routes, or the tracklog(s) from any file within the GPS Manager into your GPS using four (4) simple steps.

1. Click on the **'Connect to GPS'** button on either the main menu buttons or quick link access buttons.
2. Check which 'type' of GPS data you wish to upload from the Transfer section of this panel, i.e. waypoints, routes and/or tracklog(s). You must have at least one of these types checked, and can have any or all of them checked to upload.
3. Select the file that you wish to upload from. Whichever file is active or shown in the left hand GPS Folders panel will have the information for the selected GPS data type uploaded ( i.e. the 'type' that you checked in the transfer section). Note, all waypoints will be uploaded but only the lowest Route or Track in the relevant folder will be uploaded unless you assign a unique number to the route or track in the 'number' field in the Waypoint Details (see 9 in Image 1).  
(To only upload selective waypoints, routes or tracks, please follow the next topic)
4. Click the **'Send To GPS'** button.

Send To GPS

All the selected GPS data will be uploaded from the GPS manager to your connected GPS unit.  
You can now view the uploaded information in your GPS.

## Selective Uploading of Data to GPS

If you wish to only upload specific waypoints, routes or tracks to your GPS, you will need to:

1. Create a **'New File'**
2. **'Copy'** or **'Move'** the selected waypoints, routes or tracks into this new file using the 'Copying and moving data within the GPS Manager' method detailed on the next page.
3. Continue on with step 1 of the **'Upload data to GPS'** section above.

For example, If you have a list of waypoints and only require one to be uploaded to the GPS, you will need to create a new file. Find the selected waypoint by selecting the file from the file tabs and right mouse click on it and select Copy To (creates a duplicate) or Move To (removes from current file) to copy or move the items into a new file for uploading. Select the file and step through the *'Upload data to GPS'* guidelines.

## Uploading icons, lines and shapes to the GPS Manager

You can transfer any icons, shapes or lines from TUMONZ into the GPS Manager. To upload a line, for example:

1. Carefully left mouse click on the line, A menu appears with the name of the object in Grey. If you gave the line a unique name it will be labelled accordingly otherwise it will be labelled **'New Shape'**.
  - By selecting **'Send to GPS Manager'** from the list, the currently selected line **ONLY** will be sent to the GPS manager.
  - By selecting **'Send Group to GPS Manager'** from the list, the currently selected line and the shapes within the same folder in the User Objects Manager will be sent to the GPS manager.
2. The GPS Manager will open and populate the chosen File and Folder with the coordinate information from the line you have just sent to the GPS Manager.

Carry out the above instructions to upload to the GPS Manager.

To upload data to the GPS unit, follow the **'Upload data to GPS'** instructions as shown above.

## Uploading map items from the Standard Map to the GPS Manager

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You can transfer any of the map layers (roads, tracks, rivers etc) from TUMONZ into your GPS. To upload a river, for example:

1. Open the GPS Manager (*Ctrl+Alt+G*), select a file and the appropriate folder you wish to upload the data to, eg New File 1 – Routes folder.
2. Click on the river with the left mouse button. A menu will appear with a number of options. Click the **'Make Editable'** menu item.
3. A dialog box will appear, you should give the shape a unique name in the name box to distinguish it from other objects.
4. Click **'Close'** to close the dialog box.
5. Carefully left mouse click on the object, the unique name you gave it should show at the top of the menu that appears. Select **'Send to GPS Manager'** from the list.
6. The GPS Manager will open and populate the chosen File and Folder with the coordinate information from the shape you have just sent to the GPS Manager.

Carry out the above instructions to upload to the GPS Manager.

To upload data to the GPS unit, follow the **'Upload data to GPS'** instructions.

**Note:** The map information in TUMONZ is quite often made up of many points. It is very important (depending on the item being uploaded) to ensure that you don't use up all the memory in you GPS unit. The roads, rivers, tracks etc in TUMONZ are usually made up of many points to ensure smooth, rounded, lines. You can probably remove a lot of these points by editing the shape, and still end up with a usable set of points for uploading into your GPS unit.

## Copying and moving data within the GPS Manager

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You can re-arrange data within each file or between files using the following method.

1. If you would like to create a new file to move GPS data to, click **'File'** on the menu bar and select **'New File'** (*Ctrl+N*). You will need to do this if you only want to upload certain waypoints, routes and tracks instead of all data within a particular file.
2. Select the relevant file you wish to move or copy the data from by clicking on the appropriate file tab.
3. Find the waypoint, route or track from within that file and right mouse click on it.
4. This will reveal a menu. To move the data select **'Move To'** (removes from current file) and to copy the data select **'Copy To'** (creates a duplicate).
5. You will then be presented with three options: waypoints, routes or tracks, select the type you would like to move or copy the data to.
6. Another list will expand showing the currently open and available files to copy the data to. You can move or copy the selected items into any available file shown in this list.
7. If you are moving or copying into the route or track folder another list will expand giving you the choice to create a new route or track or add to a previous route or track.

## Drawing Styles

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Select a GPS object and choose its drawing style.

1. Simply right mouse click on the object and select **'TUMONZ'** from the drop down list
  2. Then select **'Draw in TUMONZ'**.
  3. This presents you with a list of drawing styles to choose from. Selecting a drawing style will change the default drawing style of the item you have currently selected from a yellow line to your selected drawing style.
- You can have multiple drawing styles for an object by repeating the previous three steps.
  - Once you close the GPS Manager, the object will continue to be drawn with the selected drawing style.

## Copying objects to the User Objects Manager (UOM) in TUMONZ

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You can copy any objects in the GPS Manager to the TUMONZ UOM by:

1. Right mouse clicking on the object
  2. Select **'TUMONZ'** from the drop down list
  3. Select **'Copy to TUMONZ'**
- If you are copying waypoints, you will have a new folder in the **'Icon Points'** called **'Waypoints'** on the left hand side of the UOM.
  - If you are copying a route, you will have a new object in the **'New User Defined Lines'** called **'New Route'** on the right hand side of the UOM.
  - If you are copying a track, you will have a new object in the **'New User Defined Lines'** called **'New Track'** on the right hand side of the UOM.

## To relocate a waypoint using the TUMONZ map

### To relocate a single waypoint:

1. Select a waypoint from a file or within a Route or Track that you wish to relocate.
2. Click on the **'Mark'** button above the Waypoint Detail (9, Image 1).
3. Click on the point on the TUMONZ map where you would like that waypoint to reference.
  - **Note:** If you just left mouse click on the **'Mark'** button once, you are permitted one click on the map to pinpoint your waypoint, if you get it wrong you need to click mark again and click on the map again.
  - If you press the Ctrl key while clicking on the **'Mark'** button you are able to add multiple waypoints by clicking directly on the map. At each map click, a new blank point is added and the coordinates for the currently selected Waypoint is recorded.

### To relocate multiple waypoints:

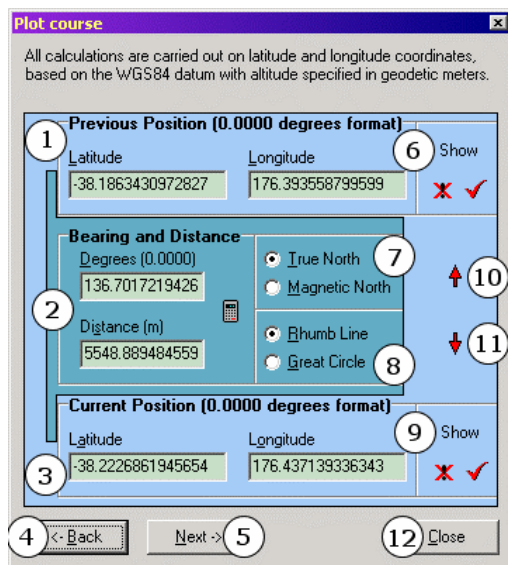
1. Highlight all the waypoints you want to relocate.
2. Hold down the **'Ctrl'** button on your keyboard and then click on the **'Mark'** button.
3. You will be able to click multiple times on the map, each time you click on the map it will be for the next waypoint you selected. This will loop through the selected waypoints over and over.
4. Click **'Mark'** again once you are satisfied with the location of each waypoint.

## To plot a course based on bearing and distance or latitude and longitude:

### An Overview

Here we are essentially developing a sequence of Waypoints with an offset of bearing and distance between each. For most purposes you will start by adding a new track or route (right mouse menu), then add a start waypoint (right mouse menu again), select the empty waypoint, and use the 'Mark' function to locate it. The next series of commands will take place in a new window (Plot Course window) initiated by selecting 'Offset'. You will then add a new blank waypoint from within the Plot Course window, and apply a bearing & distance offset (or alternatively, enter its Latitude and Longitude). A command will draw the now offset waypoint on the map.

The process is simply repeated until the Course is plotted. The Plot Course window and the sequence of action required to create a Course are detailed below:



1. Shows the Previous Position lat/long coordinates (Updated as you add the next waypoint).
2. Shows the Bearing and Distance between the Previous and Current Position.
3. Shows the Current Position lat/long coordinates.
4. Clicking 'Back' will take you back one waypoint in the current route or track you are marking or plotting the coordinates for.
5. Clicking 'Next' will take you forward one waypoint in the current route or track you are marking or plotting the coordinates for.
6. The cross reverts the coordinates back to the original, while the tick accepts and draws the new position on the map using the coordinates showing in the two entry fields (1)
7. Sets the bearing degrees to either True North or Magnetic North.
8. Sets the calculation system to use, Rhumb Line shows true bearing while Great Circle does not.
9. The cross reverts the coordinates back to the original, while the tick accepts and draws the new position on the map using the coordinates showing in the two entry fields (3)
10. Calculates the coordinates for the Previous position based on the degrees and bearing figures, the north selection (True or Magnetic) and calculation system (Rhumb Line or Great Circle).
11. Calculates the coordinates for the Current position based on the degrees and bearing figures, the north selection (True or Magnetic) and calculation system (Rhumb Line or Great Circle).
12. Closes the Course Plotting Window.

### Sequences of actions:

1. Select the waypoint from the file and holder (Waypoints, Routes, or Track) you wish to start your plotted route from. If you don't have a waypoint to start with, you can create one by right mouse clicking and selecting **'New'**. You will also firstly have to mark the new waypoint on the map by following the steps in the first example at the top of this page.
2. Click on the **'Offset'** button above the Waypoint Details (9, Image 1). The window shown above will appear. The position of the waypoint you selected will be displayed in the fields at point 3 shown in the image above. Also there will be a red dot on the TUMONZ map, this dot represents the current position.
3. Click the Next Button (5), this creates a new blank waypoint and moves the position of the waypoint you started with up to the fields of the previous position (1).
4. A) To position your new blank waypoint by **latitude / longitude**, fill out the current position fields (3). Then click the tick (9) to apply these coordinates to the current position.  
B) To position your new blank waypoint by **degrees and distance**, fill out the fields (2), set the north selection (7) and the calculation system (8) then click on (11).

NOTE: True North and Rhumb Line should be set by default, if you are unsure of what selection and system to use just leave them set as they are

- The new waypoint now has the coordinates set either by the lat / longs entered or by the calculation from the degrees and distance, entered. Clicking **'next'** will return you to step three in this exercise.

## Live Tracking and Recording your GPS Unit

Live Tracking

To live track using the new GPS manager, simply click on the **'Live Tracking'** button. The following image will replace the one shown in *Image 1*.

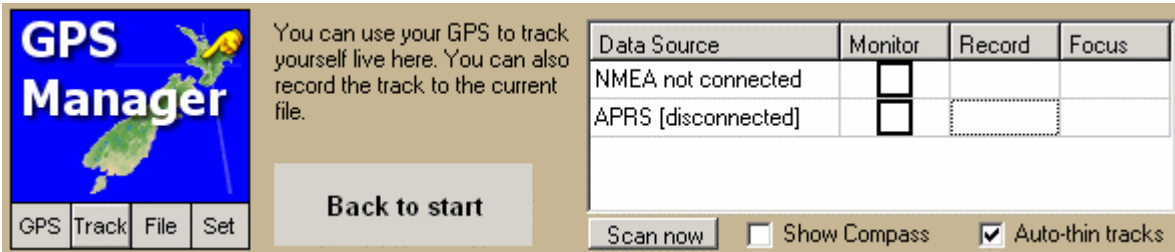


Image 3

### GPS Settings

To live track in TUMONZ you first need to check and/or set your GPS interface.

- If you own a Garmin GPS, set the interface to Garmin / Garmin.
- If you own any other brand of GPS other than Garmin or Magellan, set the interface to NMEA.

### Within the GPS Manager

If you do not own a Garmin or Magellan GPS unit and have set your interface to NMEA, click in the box under the heading **'Monitor'** next to NMEA, shown at the top of the image above.

Otherwise your connected GPS should be visible in the list of Data Sources, if not, click **'Scan now'**. (For example, connecting a Garmin GPS 12XL using the Garmin / Garmin interface will add Garmin GPS 12XL to the Data Source list.)

If your GPS is not showing in the **'Data Source'** list, make sure that:

- Your GPS is connected to the computer.
- Your GPS is turned on.

Next, check the **Monitor** box adjacent to your GPS entry. If your GPS has good coverage, you will see the 'Live Tracking' icon on the map where the GPS is broadcasting its position.

If your position is not displayed on the TUMONZ map, make sure your GPS has coverage.

- Monitor:** If this is ticked, the selected data source will be monitored for position updates and displayed on the map.
  - Record:** This becomes available if *Monitor* is ticked. If this is clicked, points are created for the selected data source in the highlighted section (waypoints, routes or tracks) in the active file. As the data source receives new position data, the points are recorded. Please note that the *Record* feature is not available for the APRS data source.
- Focus:** This becomes available if *Monitor* is ticked. Ticking this box will do two (2) things.
  - Centre the map on the monitored data source.
  - Enable compass details to be shown on the compass. Note: Requires *Show Compass* to be ticked. Please note that the *Focus* feature is not available for the APRS data source.
- Show Compass:** If this is ticked the compass will be displayed. Displays latitude, longitude, altitude in metres bearing in degrees, kilometres, miles per hour and knots. Note: This information will only become 'Live' if the *Focus* is ticked on the monitored data source.
- Auto-thin tracks:** Will not add new points to the recorded file if they are part of a straight line or within 5 metres of the last position. **Check this field to avoid creating excessive GPS position records.**

# Live tracking multiple unit on the APRS™ Network

APRS = Automatic Position Reporting System

APRS is a multifaceted system for use with packet radio by Radio Hams, it allows the monitoring of real time geographical information such as the position of vehicles, the status of weather, radio direction finding and much more. It involves mapping, GPS tracking, packet radio, etc. It is a very interesting facet of packet radio and has much to offer almost everyone including non-hams that just want to monitor over the internet.

## To monitor APRS (Default):

1. Click in the box under monitor next to APRS in the data source list.  
The **'GPS Tracking Server'** application will open in the System tray at the bottom of your screen (with all the correct settings set) and needs to be either connected to an APRS server or a AGW Packet Engine.

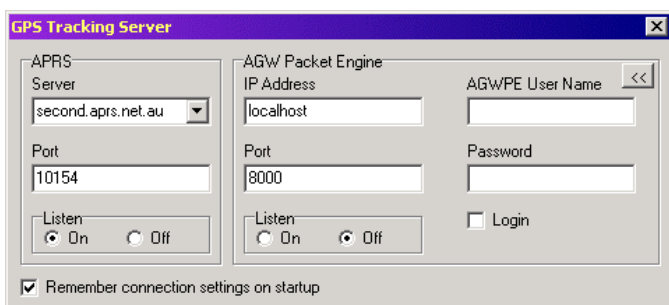
Note: To connect to an APRS Server, you need to be connected to the internet and allow the GPS Tracking Server access to the internet if you have firewall installed and running.



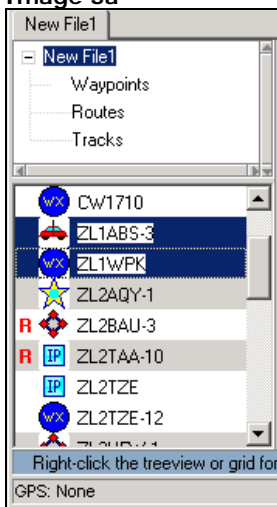
The GPS Tracking Server Icon will be displayed in your System tray once 'monitor APRS' is clicked.

## To set up and monitor an AGW Packet Engine:

1. Right mouse click on the GPS Tracking Server Icon in the tray and select **'Settings'**  
The following window will appear, *Image 3a*
2. You need to fill in the fields **'IP Address'** and **'Port'** and select **'On'** under **'Listen'**
3. If your AGW Packet Engine is set up to require authentication, then you'll be required to fill in the two extra fields to the right.  
**'AGWPE User Name'** and **'Password'** then click on **'Login'**



**Image 3a**



**Image 3c**

Once the APRS is connected and monitoring, you will begin to see call signs populate the area under the waypoints routes and tracks. *Image 3b*.

You can select a call sign by single left mouse clicking on it. Selected call signs are highlighted blue. To unselect the same call sign, left mouse click on it again.

You can multi-select several call signs by single left clicking on each of the call signs you wish to select.

To unselect multiple call signs, simply single right mouse click and click on Deselect all.

Once a call sign is selected you can single right mouse click in the panel and a menu will appear. *Image 3c*.

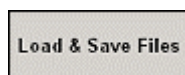
This menu gives you the ability to perform the tasks listed below.

**Image 3b**

- Include:** Ticked by default for each call sign, un-checking will remove the selected call sign marker from the TUMONZ map.
- Record:** Records the location details from the selected call sign in a new track. If it is a stationary call sign you have chosen to record, only one waypoint will appear in the route. Call signs that are currently been recorded show a red 'R' next to there entry, shown in *Image 3a*. You can still record call signs that are excluded from the TUMONZ map.
- Include all:** Clicking on this will show all the call sign markers on the TUMONZ map if one or more have been excluded.
- Exclude all:** Removes the markers for all call signs off the TUMONZ map. Excluded call signs have a grey background behind them shown in *Image 3a*.
- Exclude by Default:** Sets the default behaviour for each new call sign that the marker will not display on the map. But the call sign will still display in the list.
- Select all:** Selects all the currently available call signs.
- Deselect all:** Deselects all the currently selected call signs.
- Clear all:** Removes all the current call signs from the list and removes the markers from the map.
- Mark all as waypoints:** Sends all the currently available call signs to the waypoint section within the currently selected file.
- Copy history to clipboard:** Copies the selected call signs history/details into the clipboard for pasting into other applications.

## Loading and Saving Data

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To create a new file, open an existing file or save the currently active file in GPS manager, simply click on the '**Load & Save Files**' button. The following image will replace the one shown in *Image 1*.

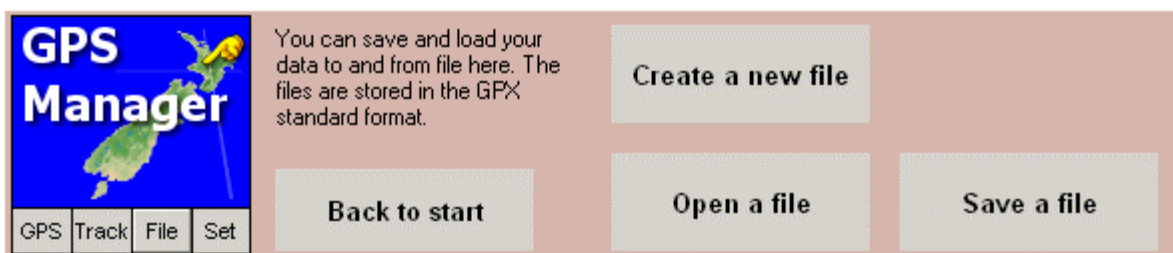


Image 4

### Create a new file (*Ctrl+N*)

Creates an empty file for:

1. Downloading data to/from a GPS
2. Recording a live position from a GPS or APRS
3. Copying or Moving data files into from another file for uploading to a GPS or saving.

### Open a file (*Ctrl+O*)

Opens a GPX file. Either one created within the TUMONZ GPS Manager or one from another application

### Save a file (*Ctrl+S*)

Saves the currently active (selected) file to a GPX file.

This can be opened again later in the TUMONZ GPS Manager or sent / copied to another TUMONZ user for use in their GPS Manager.

## Changing the GPS Manager Settings

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To access the settings within the GPS manager, simply click on the '**Settings**' button. The following image will replace the one shown in *Image 1*.

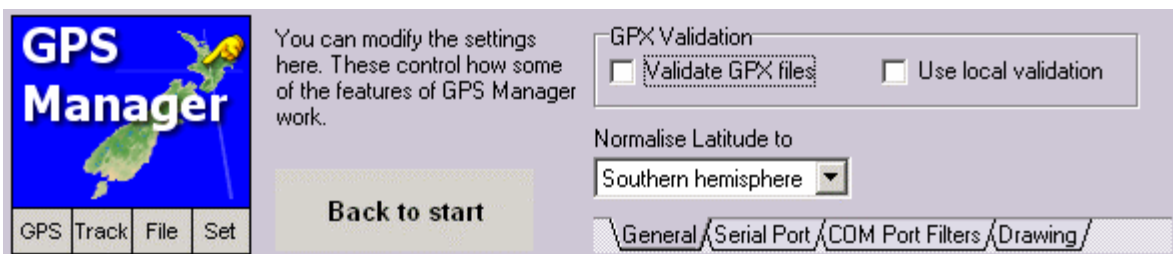


Image 5

### General Settings

#### GPX Validation

- If '**Validate GPX files**' is checked (Checked by Default), the GPX file that you try to open will be validated to check that the file conforms to the guidelines set by the GPX standards.
- If '**Use local validation**' is checked, validation is completed using a file stored locally to validate the GPX file as opposed to connecting to the internet to retrieve the same information.

#### Normalise Latitude

Set to Southern Hemisphere by default, will change any latitude data brought into the GPS Manager to a negative value whether it was a negative or positive.

#### Serial Port

Only available in the professional version of the GPS Manager

#### COM Port Filters

Only available in the professional version of the GPS Manager

#### Drawing

Only available in the professional version of the GPS Manager