

GPS Software and Applications

This is a review most of the current off the shelf and home grown applications that you can use in your car – and I don't mean PPC !



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An Overview

OK this is not about how GPS works but let me give you very quick over view. Above us in a static orbit are twenty four satellites, these have highly accurate clocks in them sending out a signal all the time. The GPS receiver needs to pick up just a few of them to get a position – it does this by some fancy calculation.

There are also two standards of receiver, NMEA and SiRF – the later been the newest and quickest at getting a lock (or position) from start-up.

Further more (just to complicate the issue) there are a couple of systems been looked at to work with (and in competition to) the GPS system. The main one is by the European Union. Why ? There are various reasons but the main one is that the GPS system is wholly controlled and owned by the United States government so the plan is that this new system is going to improve accuracy and create new business opportunities – only time will tell.

In the mean time we have to stick to GPS which does exactly what its supposed to do but a GPS only gives you your location – how do you make it do all the fancy graphics and routing ?

That's where the software comes in, from free to above 300€ we'll cover the whole spectrum and let you know where the good and bad points are. Some thing else to watch for as well while reading is the requirement now for live traffic data to allow for dynamic routing. This data can be collected via the air using TMC (Traffic Message Channel) or its new big digital brother T-PEG. In some cases this very same data can be accessed across the Internet via GPRS meaning that specialist hardware is not always needed.



The GPS System Sits Static Above The Earth



Destinator (PC Version)

Destinator has become a major player in the CarPC market mainly because the applications were designed and implemented with the touch screen user in mind – mainly for its corporate users but still ideal for us 'other' users. Now before I go any further a couple of points I need to make.

Powerlock (or HSTC) now have no plans to develop any further version of the client, nor are they making it easy to gain access to the SDK (which is another \$50) to allow you to use the MapMonkey and Freedrive front ends legally. That does not even count the cost of the maps themselves.



Destinator

Destinator 3 (which is the latest version) provides some excellent and trend setting functions like a true touch screen interface and birds eye (as well as 3D) views of where your going. It also comes with very detailed maps from Navtech. The SDK is also amongst one of the best at the moment allowing programmers to interact with most features.

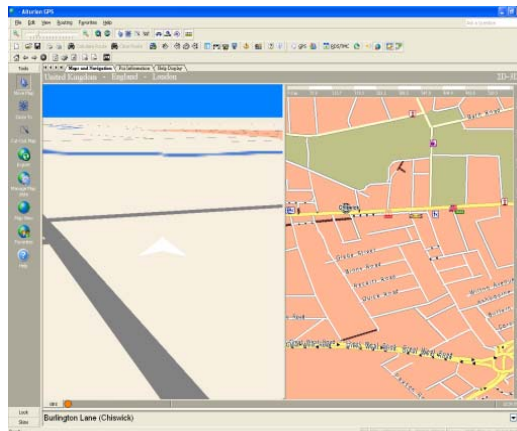
One advantage of Destinator in light of Powerlock's non development of the application is that the maps from the Pocket PC version (or PPC) are also directly compatible with the PC version.

Sadly everybody in the community is currently looking for a replacement now so although it currently holds the top spot that will not be for ever

Alturion (PC Version)

Now if there was ever was a contender for Destinator's place it could be Alturion. The PPC version has received rave reviews from some quarters but although the PC version provides the same (if not better functionality) its interface and SDK leave a lot to be desired.

So lets cover the bad stuff first starting with the SDK, this is a very new and softly announced add on – and to be honest a real step in the right direction. But because it is so new it does not have the comprehensive control that the Destinator SDK did (or does depending on how you look at it) to allow such apps as Freedrive and MapMonkey to be made using Alturion as a base. That been said it has the basic controls and comes with some excellent Visual Basic scripts which is what most CarPC front ends are made in now.



A screen shot of Alturion 7

The second problem with the Windows application (other than the fact you need Microsoft's Active Sync installed to install it) is that the interface is not designed with a touch screen in mind – far from it. Now I am not sure what the aim was here although you do get a real functional piece of software but it just looks like MS Autoroute with some extras. Yes you can set your route and then press F11 for full screen but that's about it. What I would like to see Alturion do is to look at the likes of Destinator, Freedrive, MapMonkey and see how a touch screen interface should look – after this I would expect Alturion (with the addition of US maps) to fly off the shelves and kick Destinator to the bottom of the pile.... By the way it still would need a better SDK to support all this extra functionality.

Ok the really good bits.... 2D and 3D maps (including a split screen), routing, voice commands, a really good POI (Points of Interest set which by the way have the best icons I have seen yet), most of the European area is covered at the moment in terms of map areas. The best bit about this app is that it has not only weather information that can be downloaded live via a GPRS connection but live Traffic data from each countries TMC (Traffic Message Channel). In short this allows you to navigate around traffic problems dynamically and on the move just like the OEM systems !



An example of on screen TMC data

At this moment you can either use a TMC GPS hardware device or register and as I said before access this information across the Internet – there is currently no charge other than what your mobile provider will charge for the data however there are possible moves at the

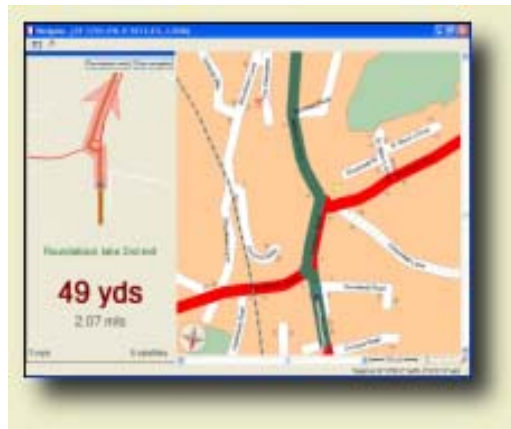


moment by the UK data owner ([ITIS Holdings PLC](#)) in the UK to change their licence structure so this may change yet.



Infomap

I first reviewed Infomap on my site over two years ago and I said at the time it had to make some improvements to make inroads in to the CarPC market, so has it ? Well yes, but not at a pace to be noticed.



Infomap

It has still got 2D graphics only and the intelligence behind the routing is less prone to errors but it still has that horrible Windows interface. Well, actually that's not entirely true – recently they introduced a very basic touch screen interface with certain levels of their packages but it leaves a lot to be desired. It allows access to the main features but it should have been designed like many of the other community packages. That is that all functions are available and that it is pretty easy with standard skinning skills to tailor the look the end user might want. This way the GPS package takes on a new life and I believe is what is at the hart of the success of packages such as Freedrive and MapMonkey.



Infomap's Touch Screen Interface

What this package does give with the Pro version is a fairly ok SDK as well as a full UK post code data base which to be honest I have not seen else where to this detail yet. It also offers in a round about way as POI support warnings for safety cameras – although I am not sure if this was an after thought or not.

Like so many of the packages out at there moment this is another package that has failed to grow up yet by adding comprehensive SDK support, 3D Mapping, a comprehensive skinnable application and even traffic information support.

As the only off the shelf GPS application I have reviewed from the UK I find it lacking how ever after speaking to the team that produce Infomap I believe it may be worth another look at its next major release. They plan to include a better CarPC interface (which means they do listen to the community – bonus) and even better for the first time they are including 3D views. This major release version is due out around December 2005 with a further release some time in 2006 with additional TMC support.

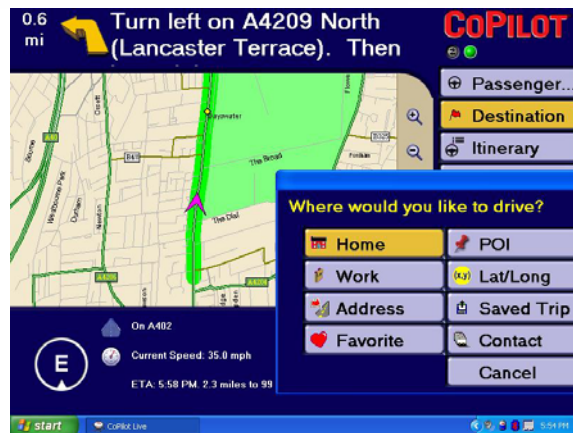
Co-Pilot

I've not had chance to get my hands on this how ever I do know some of the experiences from our US counter parts of earlier versions. Why am I including it then ? Well it would not be a fair review if I did not cover all I could.

Co-pilot is a little more set up for the CarPC environment with certain screens 'touch screen' enabled allowing access to most of the major features. It still has the 'Windows' type interface behind it but at least this is an excellent way forward. Like Destinator it has support for maps in the EU and US which is also a good thing – and been US based some applications like Media Engine supported Co-pilot directly, whether this version would work I am not sure. Although traffic information is missing and it only has 2D maps it does have a couple of unique features.

The first been a passenger and driver screen setup – this is an excellent safety feature I have not seen before where by a passenger mode can be selected to access more of the functions for routing etc while moving compared to the drivers screen.

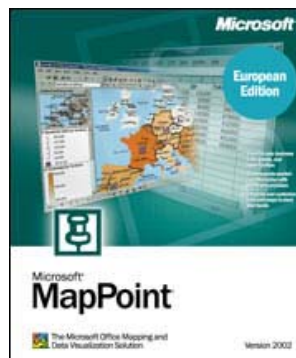
The second function I have not seen before is the ability to track for free any paired system via a web site via GPS – this has an excellent pay off function to allow paging messages from the web site to the driver and to allow it to be displayed on screen.



Co-Pilot 7 For The PC

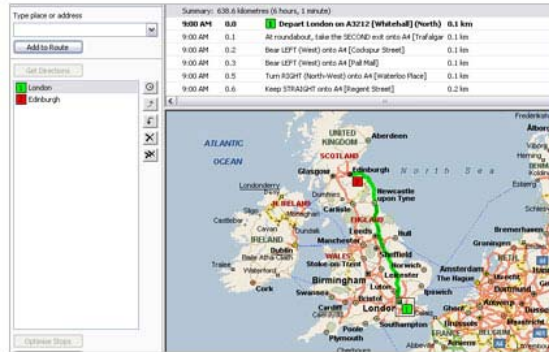
Microsoft MapPoint & Autoroute

If you know Autoroute then you know MapPoint which is why I have combined the two. The main difference is that MapPoint can be controlled externally through other programmes which led to the 2002 version gaining a lot of credit and use within the community. It does provide a very clear 2D map and inbuilt GPS functions but the routing functions need to be provided by the front end – i.e. Road Runner.



MapPoint

Two things to point out – first of all if you are using Autoroute you may want to visit <http://www.gpssoft.homestead.com/> to pick up the latest patch to enable your GPS to be polled quicker for location information than the default allows. The second point relates to both Autoroute and MapPoint and that is that certain versions will allow the use of the later maps (license required). This has been discussed before on the MP3car.com forum so do a quick search and you should find the information of how to do this.



Autoroute

Travelbook

Again I've not had chance to get some experience from this programme so what follows is the result of some research, again the motives are to provide you the reader with as much information as I can.

With 2D maps and a large possible map resource covering most of the EU this looks like an application with some potential. The interface is very clean and touch screen use is possible. One feature that some of the big applications only just now seem to be adding is the traffic data. This in its self I believe is a winning feature with the state of today's roads no matter where you are.

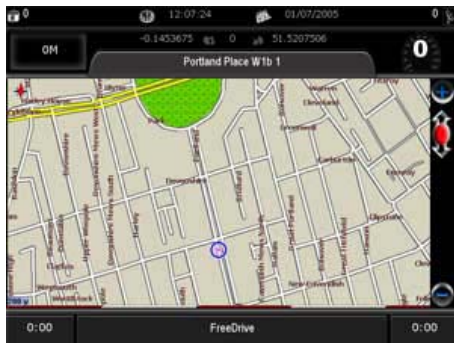


Travelbook

Freedrive and MapMonkey

The first thing to remember about Freedrive and MapMonkey is that they are based around Destinator so you will need to have bought a copy both for licence reasons and for the maps them selves, also you may require a copy of the Dest_DLL.DLL file which is available though the Destinator SDK at extra cost.

So what advantages do these new front ends to Destinator give us ? LOTS ! Ok so we are still limited by the same map views but the extras you get are obvious straight away – a better looking interface. (Software houses take note) This is achieved by making the applications fully skinable and in the case of Freedrive this can even be done using Macromedia Flash – oh the possibilities.....



FreeDrive

Safety camera alerts are available in both applications although Freedrive in my opinion presents this better to the driver.

MapMonkey has the unique feature of offering an SDK and plug-in system which allows programmers to further enhance functionality. An example of this is the tracking plug-in which allows drivers to re-trace their journeys – an ideal feature for company car drivers.

Freedrive will also be offering direct integration with infomatics.info in future releases allowing access to live traffic information and more presented on screen and on the map.

It is hard to say which one of these applications is the best because they are both quality pieces of software and I have (and still do) use both of these on a daily basis. What I will say is that these applications meet 90% of CarPC requirements for GPS software even though it is based on now discontinued software because it was designed and contributed to by members of the community and if the software houses wanted yards sticks to measure by either of these would do.



MapMonkey



Infomatics.Info & Traverse

Although Infomatics.info and Traverse are not strictly GPS software they can play an important part in your journey.

Infomatics.info is a new free service that has been created to provide a common standard of data feed from many live sources. The data it carries it covers is live traffic data, matrix signs, weather and many more, it also will provide at a later date a method for tacking your movements and live updates of safety cameras. Unfortunately it will only launch with UK coverage how ever there is no reason this may be expanded because like Freedrive and MapMonkey Infomatics.info is another community run project of which I am a member of.



An early screen shot of a road works incident

The ultimate aim is that using this common data standard any application on any platform at all that can access the Internet will be able to use it and in fact already some of the major players like Freedrive are looking at implementing it. In the mean time Traverse has been designed to work over or in conjunction with any application. It will provide an automated way to collect the latest data (about 10k per update for a 50 mile radius) and show that data graphically. The great thing about Traverse is that an SDK will be provided with it allowing programmers to very quickly start integrating it in to their software.

Bag Nav

This is another in work community project but one I felt still worthy of mentioning in this review.

Using satellite images of the country you get a real photo look at your surroundings. This data unfortunately can take many gigs of space and there is a no routing facility yet how ever it does give you some excellent eye candy that no other application or OEM system currently can provide.



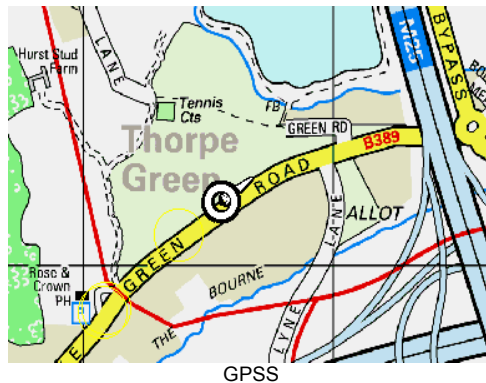
BagNav



GPSS

In the distant past I looked at this application and didn't rate it much. As a result of this article I have revisited it and been very surprised and pleased to see the improvements and advances GPSS has made over time. It now includes support for 155 countries as well as safety camera alerts yet it is available at a fraction of the price that larger more well known packages cost.

The main difference with this application rather than most of the other community created packages is that it has been developed from the ground up instead of using SDKs, this and the fact it is so small is probably what has made GPSS such a hit in areas that it has even been used on TV, a fact that Robin Lovelock the programmer should be proud of – well worth a look.



<http://www.gpss.co.uk/>

PPC Emulator

OK so non of the above are any good for you ? You still want to use the likes of TomTom or Route66 on the PDA, well you can but its not an integrated solution. Microsoft has just brought out a PPC Emulator but at this stage its in beta version only. It does seem to run OK although slow but it also takes 100% processor power to run in the first place. A number of people have trailed it with some of the offerings out there and for the most part not had a problem – even when using PC hardware. The down side to all this is that its not integrated to any front end although Alturion was tested to a 800x600 screen size with no other problems.





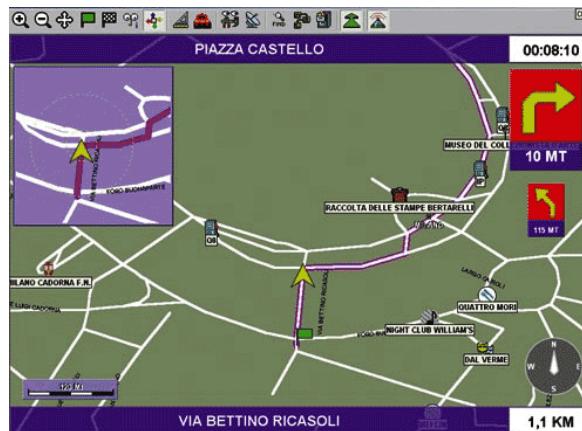
SDAL

SDAL is a new common format for GPS maps from Navteq allowing any kind of platform or system to utilise their map data. As the format is an Open source format its worth mentioning in our little review even though it is not an application as such. Navteq provide a number of free tools and API's which means the job of utilising the format is made easier.



It provides the following data features according to [Navteq's web site](#)

- Optimised for route calculation: specialised data representation and retrieval functions that enable rapid route calculation
- Fast map display capability: rapid display of rich, customizable maps with advanced functionality such as smooth scroll, 3-D etc.
- Powerful and flexible address look up: a range of methods to rapidly access street name, intersection and POI information
- Superior quality, user-friendly voice guidance: hundreds of commands recorded by male and female speakers in native British English, US English, German, French, Italian, Dutch, Spanish, and Japanese with Swedish coming soon.



So far NaviPC is the only application to make use of this on a PC platform. Hopefully as this format becomes more well known many other software houses will step in together with some of the CarPC community to produce some thing truly remarkable and useable.



The Conclusion

So I have managed to review most of the PC offerings in the CarPC world and although there are others I have chosen these due to the suitability to the task at hand. There are three key areas for the ideal software production to win out right here and none of the off the self packages do this:

- Touch screen interface (that looks good)
- A good SDK to allow the community to customise and add functions
- Traffic or other informatics information

The only potential winner (Destinator) has pulled out so its up to the less experienced packages to see if they can make it in to this field, that is if they believe there is a market for it and we (the community) need to make sure they know there is.

Name	2D 3D Views ?	SDK ?	Routing	Map Coverage	TMC / TPEG	Safety Cameras	Score ?
Destinator	2D 3D Birdseye	Yes	Yes	Depends On Map Pack	No	No	7/10
Alturion	2D 3D Birdseye	Yes - Limited	Yes	Depends On Map Pack	Yes	No	7/10
Infomap	2D	Pro Only	Yes	UK and EU	No	As POI's	6/10
Co-Pilot	2D 3D	VB Only	Yes	Depends On Map Pack	No	No	6/10
Map Point	2D	VB Only	Not Directly	Most of the World	No	No	5/10
Autoroute	2D	No	Not Directly	Most of the World	No	No	4/10
Travelbook	2D	No	Yes	UK and EU	Yes	No	5/10
Freedrive	2D 3D Birdseye	Yes	Yes	Depends On Map Pack	Via Infomatics.info	Yes	9/10
Mapmonkey	2D 3D Birdseye	Yes	Yes	Depends On Map Pack	No	Yes	8/10
Traverse	N/a	Yes	N/a	UK Only	Via Infomatics.info	Yes	N/a
Bagnav	Real Photo	No	No	UK Only	No	Yes	5/10
GPSS	2D	No	Yes	155 countries	No	Yes	3/10

Name	Web Link
Destinator	http://www.destinator1.com/
Alturion	http://www.alturion.com/
Infomap	http://www.directions.ltd.uk/
Co-Pilot	http://www.alk.com/
MapPoint	http://www.microsoft.com/
Autoroute	http://www.microsoft.com/
Travelbook	http://www.cas.de/
Freedrive	http://www.freedrive.co.uk/
Mapmonkey	http://www.mapmonkey.net/
Traverse	http://www.infomatics.info/
Bagnav	http://www.jimbagley.co.uk/
GPSS	http://www.gpss.co.uk/
MS PPC Emu	http://www.microsoft.com/downloads/details.aspx?FamilyID=83A52AF2-F524-4EC5-9155-717CBE5D25ED&displaylang=en



Terran Brown – Biography



Terran has worked in the IT industry for 'Blue Chip' companies since the early 90's on various technical roles from wide area networking, to PC build and server support. Currently he works as a Project Manager for a leading international outsourcing company still working with large 'Blue Chip' customers. It was a result of his technical background that his interest in the CarPC technology grew to the point where he is now of the more recognised enthusiasts from the UK.

His project home site can be found at <http://www.letscommunicate.co.uk/carpc/>

About CarTFT.com



CarTFT.com was founded in spring 2003 with the goal to offer people a cheap way to integrate computers into cars. As we do a lot of cross-border selling we know that trustworthiness is everything in online business. That's why we try to support the community, offer external insurance for every order, and try to have large stocks to enable shipping of orders as fast as possible. We also try to resolve RMA cases within only days instead of weeks / months where possible.

Our "technical" goal is to offer products which allow the customer to have an open platform and no proprietary system, where he / she can't change anything.

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