

Simple GPS receiver by Ian Burkinshaw

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In my previous article on GPS I have used fairly complex and/or expensive solutions for the receiver. Such as the EPE Camera Watch Mk2 project, which Hugh Room also used for his project, or the RF Solutions GPS evaluation card. In both cases they most likely provide more functionality than you may want. Also they are fairly large projects both from a construction point of view and physically large as well. This article looks at an alternative, which is simpler, smaller and cheaper. This project is published in the October 2008 issue of Elektor magazine. You can download the original article from the Elektor web site for a small charge. You do not have to purchase the entire magazine. So I will not be going in the finer details of this project here. I wanted just showing people an alternative receiver solution. This project does require soldering, and a fine tip iron for the GPS module connector is required. But otherwise is as simple as you can get. The PCB is silk screened with all the components shown and their orientation. There is very little wiring involved, just the battery connector. In all other respects it is all self contained. To connect to your QL/PC you will need either a RS232 (9 pin) cable or if your PC does not have RS232 connectors then a USB to RS232 adaptor. I use an adaptor from PC World with my ASUS Eee PC. Parts List, Where to obtain and price guide, Prices correct at time of writing but with the exchange rates as they are, this may well change.

1 x PCB. 14.22 Euro plus 6 Euro Post & packing, The PCB Shop
1 x EM-406 GPS module 62.71 Euro, Lextronic
1 x Connector for GPS module 2.01 Euro Lextronic For both the module and connector you need to add 15.05 Euro post and packing.
1 x MAX242 IC, RS Components 151-802, `3.20
1 x 78L05 Voltage regulator, RS Components, 189-1295, 53p
1 x 470uF, 25V, Maplin, VH47B, 39p
1 x 220nF, Maplin, JL02C, 11p
1 x 10uF, 25V, Maplin, VH22Y, 11p
6 x 100nF, Maplin, BX03D, 11p each, 66p total
1 x 100K, Maplin, M100K, 11p
1 x 9 pin D-Tyle female PCB connector, RS Components, 259-3582, `4.40
1 x 1N4004 diode, Maplin, QL76H, 15p

The total cost for this project will be around `100 depending where you purchase the components, the list above is only to give you guide. Also does not include a cases to house the project either. I have tested this receiver with my version of Hugh Room's software that was published in Vol 13 Issue 1 of OLToday. I would like to thank the editorial team of QLToday for publishing the listing, since it is very long. I did not expect it to be published. I hope people have found it interesting. I use this receiver with my Eee PC since it makes a very good portable set up. The receiver having it's own battery also means I get maximum life out of a charge of the PC. Unlike others who have commented on the Asus Eee PC I do get over 2 hours use per charge which I think is quiet good. I only get 1 hour out of my work Sony Viao laptop! One tip to getting good battery life out of the Eee PC is to keep the screen brightness to a minimum. With the screen saver on when the software is just recording data, you get even more life. You do not need to have the screen on while it is doing this. But it does depend on what you want to do with the unit and software.

References

Elektor Multi-purpose GPS October 2008 issue, PDF download available at a cost at www.elektor.com

GPS Module Lextronic, www.lextronic.fr

The PCB www.thepcbshop.com

RS <http://rswww.com>

Maplin www.maplin.co.uk