

## Re: Synchronising PC clock on the GPS time using GPS receiver

**Source:** <http://sci.tech-archive.net/Archive/sci.geo.satellite-nav/2004-08/2373.html>

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**From:** Jon Parmet ([jon\\_at\\_parmetpc.volpe.dot.gov](mailto:jon_at_parmetpc.volpe.dot.gov))

**Date:** 08/27/04

Date: 27 Aug 2004 08:00:10 -0700

John Navas <[spamfilter0@navasgroup.com](mailto:spamfilter0@navasgroup.com)> wrote in message  
news:<[OYtXc.9906\\$54.142640@typhoon.sonic.net](mailto:OYtXc.9906$54.142640@typhoon.sonic.net)>...

> [POSTED TO *sci.geo.satellite-nav* – REPLY ON USENET PLEASE]

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> In <[f0701dba.0408261033.7a64e43a@posting.google.com](mailto:f0701dba.0408261033.7a64e43a@posting.google.com)> on 26 Aug 2004 11:33:40

> -0700, [jon@parmnetpc.volpe.dot.gov](mailto:jon@parmnetpc.volpe.dot.gov) (Jon Parmet) wrote:

>

>>> Works fine here, with the server run by my ISP (Sonic.net), as well as open

>>> public servers.

>>

>>the Original poster asks:

>>

>>"with a (Garmin) GPS receiver connected to serial port of the PC, is

>>it

>>possible to synchronise PC clock to GPS time?"

>>

>>Why would you need to connect to another server when you've got a GPS

>>Receiver hooked onto the serial port?

>>

>>You don't, but that's not NTP -- that's NMEA.

My understanding may be wrong, but I thought NTP came with a plethora of device driver options for different GPS devices and different interfaces. So you'd configure it for Garmin whatever on Serial port wherever using NMEA.

Please correct any mistakes I'm making, because I'm interested in how the flow actually works here. NMEA is the protocol used in delivering the data from (in this case) the serial port. But after that, NTP actually takes care of serving out the time. Ok, so in the case of a standalone box, the NTP Client would be on the same machine as the NTP Server.

I've never worked with a Windows' solution.... nor NMEA for that matter in this type of application ;)

We were running under Unix, used a Trimble SVEeSix, TSIP protocol to acquire GPS Time, then simply called `settimeofday(2)` to effect the change in system clock time. The accuracy requirements we had for time were no where near what NTP provides, so the code was very simple-minded (it didn't account for any latencies).

Still, I suppose we could have served out reasonably accurate enough time from that box using NTP even though NTP wasn't controlling the device itself. They'd all be offset from USNO, but they'd all be synced close to each other ;)

> *>If you've got problems connecting to the serial port, that's a  
> >different thread drift ;)*  
>  
> *Indeed. This thread drift was about NTP the protocol versus NTP the software.  
> ;-)*  
>  
> *My basic point is that the OP could instead use NMEA software that can set the  
> PC clock with possible other GPS benefits.*  
>  
> *One such option is GPS Pac 2.2 for Windows, available for free download at  
> <[http://vancouver-webpages.com/peter/idx\\_automap.html](http://vancouver-webpages.com/peter/idx_automap.html)>.*

Sounds like it's analagous to the solution we implemented. Hopefully, the newer versions of Windows have some security built into who can call the equivalent to `settimeofday()` :P

It's fun dealing with time, given there's the GPS Epoch which is Jan 6, 1980, the C Time Epoch is Jan 1, 1970, the GPS Almanac reference times (Week#s and TOAs), and then the time you are actually concerned with which may or may not be wall-clock time.... whew!

Regards,  
Jon