



**Navisys Technology Corp.**

Tel : +886-3-5632598

Sales contact: [sales@navisys.com.tw](mailto:sales@navisys.com.tw)

Address: 2F, No.56, Park Ave. II, Science-Based Industrial Park, Hsinchu 300, Taiwan (R.O.C.)

<http://www.navisys.com.tw/>

Fax: +886-3-5632597

Technical support: [service@navisys.com.tw](mailto:service@navisys.com.tw)

## Macx-1: GPS receiver with standard USB connector and PPS support

Traditional GPS receiver supports 1PPS signal through GPIO easily. Per the request and advice from Mr. Eric S. Raymond and Mr. Dave That of Bufferbloat project, Navisys launched the GR-601W mouse receiver successfully to makes PPS events visible to a compatible USB host system through its standard USB connector. With the composition of u-blox6 based GM-601 module and built-in TTL\_to\_USB adaptor inside the USB connector, GR-601W passes 1PPS state changes to the host as USB events. The time precision is 1ms due to the USB polling interval.



**Bufferbloat** project is part of IETF (Internet Engineering Task Force) project cloud. It is an effort to fix some serious implementation problems in the Internet, which requires for high-accuracy time sources to do network delay tomography. The approval of GR-601W is helpful to the system administrators that perform statistical analysis of Internet traffic patterns.

The **NTP** (Network Time Protocol) is another project also part of IETF cloud. They maintain the software that synchronizes clocks on Internet-connected machines. Many NTP sites use GPSD as a time source for what are called "Stratum 1", the most trusted central time servers.

The **GPSD** project is an open-source service daemon for monitoring GPSes that is very widely deployed on Linux and BSD systems, including many embedded deployments. To troubleshoot some wide-area Internet performance problems, the deployment for network delay tomography provides the time service to monitoring routers running Linux.

GR-601W was well approved by GPSD project. With its cost effective solution, Navisys GR-601W meets the price/performance requirements for the winning timing GPS products. To thank Eric and Dave's good idea and great support, GR-601W also has a nickname **Macx-1**.