

WinFrog Device Group:	GPS
Device Name/Model:	GPS Pod
Device Manufacturer:	Magellan Corporation / Ashtech Precision Prod. 471 El Camino Real, Santa Clara, CA 95050-4300 USA Tel: (408) 615-5100 / (800) 922-2401 Fax:(408) 615-5200 E-mail: oem@ashtech.com
Device Data String(s) Output to WinFrog:	Pseudorange data: prn, flag, signal, code, doppler, recvtime.
WinFrog Data String(s) Output to Device:	Polling Command. Remotes interrogated sequentially by ID. True value (1) sent to unit when data is received
WinFrog .raw Data Record Type(s):	Type 303 (PR-GPS POD1)

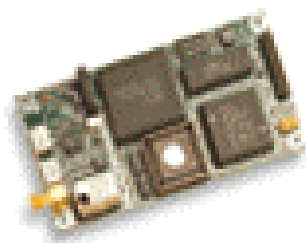
DEVICE DESCRIPTION:

A “GPS Pod” is a Fugro Pelagos product that combines a GPS receiver and a UHF radio transmitter in one single self contained (waterproof) unit. GPS Pods are used for remote station tracking operations where only position information is required for the vessel to which the Pod is installed. The GPS card receives pseudorange data from the satellites and outputs this data to the attached UHF radio. WinFrog controls the UHF radio via a “token ring” network configuration, allowing the main WinFrog system to monitor multiple GPS Pods “simultaneously”. WinFrog combines the received pseudoranges with ephemeris and RTCM correction data (RTCM optional) to calculate the “Pod’s” latitude and longitude.

GPS Pods utilize “Ashtech Sensor II” GPS receivers for the Pseudorange data.

Note: These units must be upgraded with an updated EPROM for the GPS Week roll over which occurred on August 22, 1999. Any GPS receiver able to provide ephemeris data to WinFrog can be utilized at the tracking station.

As mentioned above, these units are used for reliable remote vessel positioning where a display (i.e. real time navigation data) is not required on the remote vehicles. This configuration also removes the need for a WF operator at the remote station. For utilization of displays on remote vehicles without a WinFrog operator, refer to the Controlled Remote Tug option in WinFrog.



Ashtech Sensor II

DEVICE CONFIGURATION INSTRUCTIONS:

The following I/O parameters are suggested:

Baud Rate: 9600

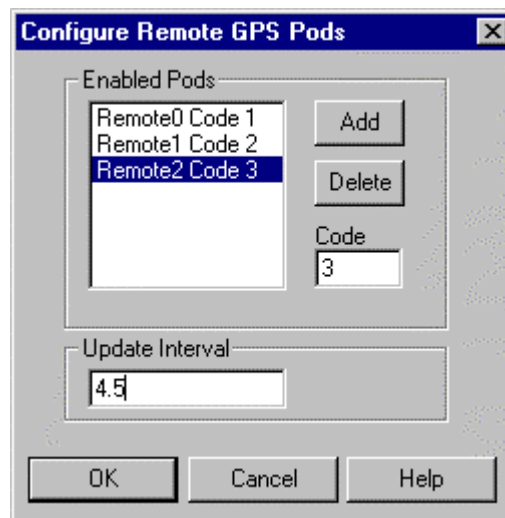
Data Bits: 8

Stop Bits: 1

Parity: None

WINFROG I/O DEVICES > CONFIG OPTIONS:

A GPS Pod is added to WinFrog from the GPS device category. The GPS Pod must be configured at the I/O Device window level, bringing up the window seen below.



Add Pods:

A GPS Pod must be added for each remote GPS Pod that is being tracked, with each Pod having a unique Remote number and Code. The Remote value is automatically added by WinFrog (in consecutive order), while the GPS Pod's Code value must match the Code value determined by the Pod's physical (programmed) configuration.

To add a GPS Pod, first click on the **Add** button. Highlight the newly added Pod, and in the Code entry space type in the required Code value. Next, highlight the Update Interval value and type in the desired interval (in seconds) The above shown value of 4.5 seconds is suggested for most token ring networks. Repeat the above steps for all required Pods, then click the **OK** button to close the Configure Remote GPS Pods dialog box and save the changes. If required, a GPS Pod can be removed from the network by highlighting the desired remote in the Enabled Pods list and clicking on the **Delete** Button.

WINFROG VEHICLE > CONFIGURE VEHICLE DEVICES > EDIT OPTIONS:

As mentioned above, the Ashtech Sensor II GPS cards used in the GPS Pods provide only GPS Pseudorange data to WinFrog. The GPS Pod Pseudorange device must be added to the appropriate (remote) vehicle's devices list.

Another GPS receiver must be interfaced to WinFrog to provide the required GPS Ephemeris data. This Ephemeris device must also be added to the Remote vehicle's devices list. RTCM format DGPS corrections can also be added to the Remote vehicle's devices list to improve the GPS Pod's positional accuracy, if desired.

The GPS Pod's Pseudorange device configuration parameters (seen below) are similar to those found for other GPS Pseudorange devices, with a few exceptions, as detailed below. For further details, please see the NovAtel Console GPS device documentation.

CONFIGURATION DETAILS:

Remote Unit ID:

Each Remote unit (i.e. each GPS Pod) must have a unique ID associated with it. The Remote Unit ID value entered here must match that number configured on the GPS Pod's radio transmitter's DIP switches. (Note that zero is reserved for the token ring network master unit).

The Teledesign radio's DIPswitches represent binary values: to configure a Teledesign 9600 radio (the type of radio typically installed in GPS Pods) to Code 1, set switch 8 in the Pod to the "on" position, and all other switches to the "off" position.

To set Code 2, set switch 7 and 8 “on”, with all other switches “off”.
To set Code 3, set switch 6 “on” and 7 and 8 “off”.

I/O Device Window Display:

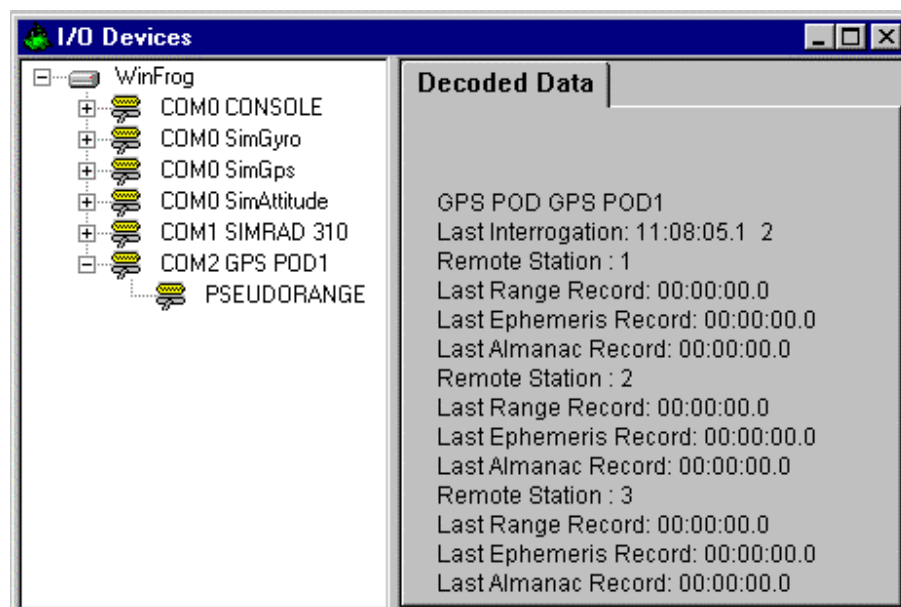
Displayed in the I/O Device Window is the following:

Last Interrogation – This is the time the units were last interrogated by the master.

Last Range Record - This is the time of the last range from the remote.

Last Ephemeris – This is the time of the last ephemeris from the master. The ephemeris is added from the master GPS unit.

Last Almanac Record – This is the time of the last Almanac. This is not as important an update as the above two items. Ranges and Ephemeris’s must be updated regularly.



Radio Type:

The radio transmitters within the GPS Pods can be Magnavox or Teledesign and possibly others. For the systems to talk to each other, the radios must be the same type.

Master Unit:

The master unit may or may not be used in conjunction with the Racal Radio Modem Controller (RMC). The serial output hardware, on the master pod (radio), will dictate this.