WinFrog Device Group:	**GYRO**
Device Name/Model:	**WHOI DIGITIZER**
Device Manufacturer:	**Woods Hole Oceanographic Institute** Information Office Co-op Building, MS #16 Woods Hole, MA 02543 E-mail: information@whoi.edu Fax: 508-457-2180 Phone: 508-289-2252
Device Data String(s) Output to WinFrog:	ASCII Heading
WinFrog Data String(s) Output to Device:	Nil
WinFrog.raw Data Record Type(s):	Type 910 (Type 410 if data repeated 15 times)

DEVICE DESCRIPTION:
The Woods Hole Oceanographic Institute (WHOI) is an organization "dedicated to research and higher education at the frontiers of ocean science. Its primary mission is to develop and effectively communicate a fundamental understanding of the processes and characteristics governing how the oceans function and how they interact with Earth as a whole".

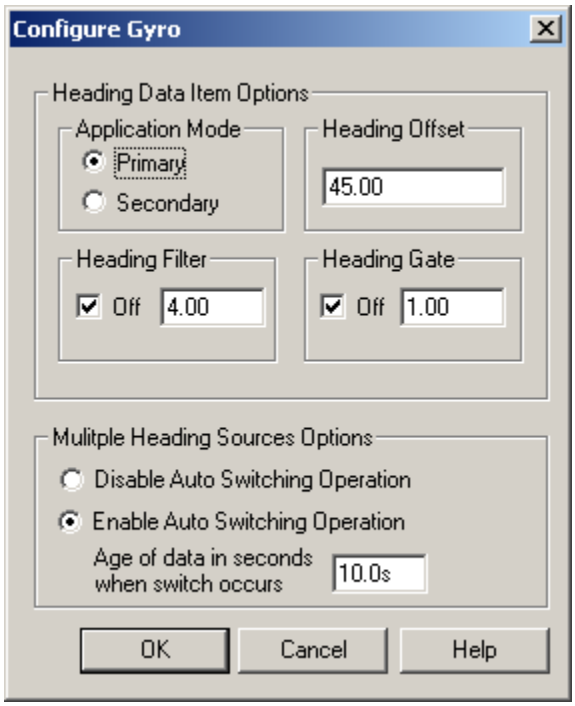
The WHOI DIGITIZER device is a gyro repeater manufactured by the Woods Hole Oceanographic Institute. This unit converts their vessel's gyrocompass analogue data output to a proprietary format RS232 serial data string.

DEVICE CONFIGURATION INSTRUCTIONS:
Baud Rate: 4800
Data Bits: 8
Stop Bits: 1
Parity: None

WINFROG I/O DEVICES > CONFIG OPTIONS:
The WHOI DIGITIZER device is added to WinFrog from the Gyro device category. Adding the WHOI DIGITIZER device to WinFrog creates a Heading data item.

When adding the WHOI DIGITIZER Gyro to WinFrog, the communication parameters must be set to match the communication settings in the gyro being used. No other configuration is required at the "generic" I/O device level.

WINFROG VEHICLE - DEVICE > EDIT OPTIONS:
Once the WHOI DIGITIZER (gyro) device has been added to a vehicle's device list, it must be edited to suit the application. To edit the device, in the vehicle's device list highlight the GYRO, WHOI Digitizer, Heading data item, then click the Edit button. The Configure Gyro dialog box appears as seen below.



Heading Data Item Options:
Application Mode (Primary/Secondary):
Set the type of calculation to Primary or Secondary by selecting the appropriate radio button. Devices set to Primary are used to provide the vehicle heading information. Devices set to Secondary are simply monitored, and are not used in the vehicle's calculations.

Note that WinFrog supports automatic switching from a designated Primary to a Secondary in the case that data from the Primary fails (see Multiple Heading Sources Options).

Heading Offset:
A correction value (as determined from a gyro calibration) can be input in the Heading Offset box. This value is added to the data being received from the WHOI digitizer to provide a corrected heading for the vehicle. Note that positive or negative values can be entered.

Heading Filter/Heading Gate:
The Heading Filter is used to "smooth" heading values used by the vehicle. The value entered in the Heading Filter indicates the number of headings that will be

used to predict the next heading value. The larger the value entered, the “heavier” the filter will be – i.e. the slower the vehicle’s heading will respond to changes.

The Heading Gate defines a tolerance value to limit the use of anomalies in gyro readings. If the next observed gyro value received falls outside the specified range of predicted values (i.e. plus or minus the entered value), the value will not be used.

Multiple Heading Sources Options:
WinFrog supports automatic switching from a designated Primary source to an alternate Secondary source in the event that the Primary fails. The first Secondary source to receive data after the Primary has failed becomes the alternate Primary providing the heading for the vehicle. When the designated Primary is detected as active again, the alternate Primary source reverts to Secondary and the designated Primary provides the heading data to the vehicle.

If an alternate Secondary fails and there are additional Secondary sources, it in turn is detected by the first of the remaining operational Secondary sources to receive data after the failure at which time this Secondary becomes the alternate Primary.

Note that this option is only available if more than 1 HEADING source is associated with the respective vehicle. Changes made to the Auto Switching options for any one of the HEADING data items are automatically assigned to the others upon exiting this dialog with OK. If the Auto Switching option is enabled and the respective HEADING source has been set to Primary, all others are automatically set to Secondary. The exception to this is when configuring a WinFrog Controlled Remote (WinFrog with a Remote module) from a Controller. In this case, changes made to one HEADING source are not automatically made to other HEADING sources. The operator must explicitly make them for each HEADING source.

This option is not available in the WinFrog Remote package.

Disable/Enable Auto Switching Operation:
Select the mode you wish to operate WinFrog.

Age of data in seconds when switch occurs:
Enter the age of data that is permitted before the source is considered to have failed.

CONFIGURATION DETAILS:

Contact the Woods Hold Oceanographic Institute for information on configuring the WHOI DIGITIZER.