ADVANCED NAVIGATION

Orientus Manager Manual

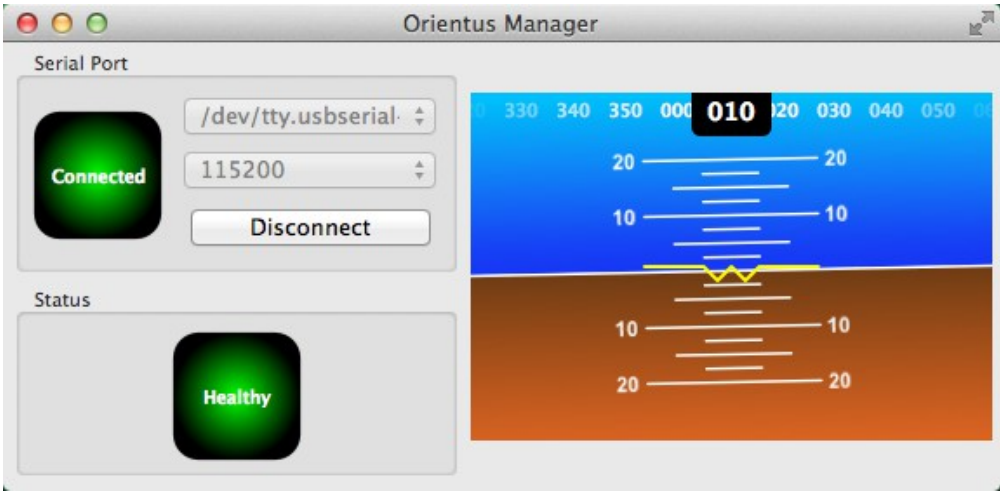

Table of Contents

1 Revision History

Version	Date	Changes
1.1	21/02/2013	Initial Release

2 Software Changelog

Version	Date	Changes
1.1	21/02/2013	Initial Release

3 Introduction

Orientus Manager is a cross platform software tool for testing, configuration and logging of Orientus. It is designed to be simple and easy to use.

3.1 System Requirements

Orientus Manager has reasonably low system requirements and most computers from 2005 onwards should have no problem running Orientus Manager.

When Orientus is running at very high output rates e.g. 1000 Hz, Orientus Manager can consume significant system resources handling the large quantities of data.

3.2 Installation

Orientus Manager does not need to be installed and can be run from any directory by double clicking on it. Orientus Manager requires a recent version of Java, available at http://www.java.com. On some systems to open the program it may be necessary to right click and select open with → Java Runtime Environment.

Both the Orientus evaluation kit and the Orientus OEM development kit make use of an FTDI USB device. The drivers are normally installed automatically, if not they are available from http://www.ftdichip.com/Drivers/VCP.htm.

3.3 Troubleshooting

Please contact support@advancednavigation.com.au if you are having issues.

3.3.1 All Platforms

If Orientus Manager will not start, ensure you have Java installed.

3.3.2 Windows

There is a well known problem with USB serial devices under Windows known as “crazy mouse”. The problem occurs when the system mistakenly installs the USB serial device as a mouse. Unfortunately Microsoft has not fixed this problem in over 15 years, so it probably won't be fixed. If you experience this problem, often a restart will resolve it. Otherwise there is a tool available at http://www.stentec.com/anonftp/pub/wingps/pnpblockersetup.exe that can fix the issue.

If the serial port does not show up when you plug in your Orientus USB device, you may need to install the drivers from http://www.ftdichip.com/Drivers/VCP.htm.

If you experience a blue screen of death whilst using Orientus Manager, this is typically a problem associated with older FTDI drivers. To resolve the problem, install the latest drivers from http://www.ftdichip.com/Drivers/VCP.htm.

3.3.3 Linux

If serial ports do not show up, the typical cause is permissions. The user should add themselves to the dialout group with the command sudo adduser username dialout.

4 Main View

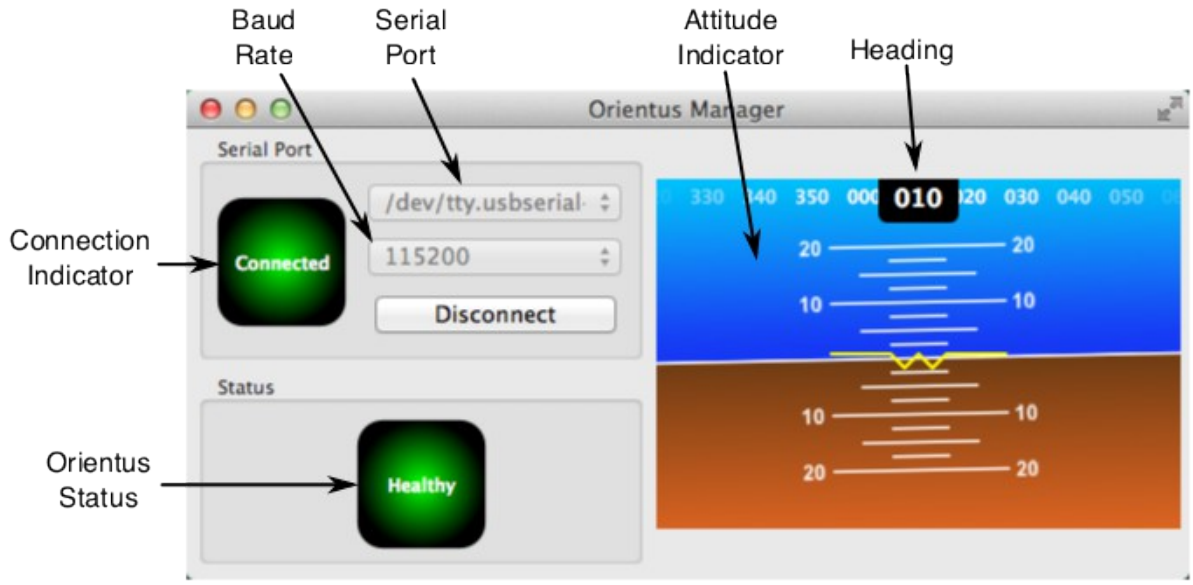

Illustration 1: Screenshot of Orientus Manager main view

4.1 Serial Port

The serial port dialog is used to connect to Orientus. You should select a serial port and baud rate then click connect. The default baud rate of Orientus is 115200. The connection indicator displays whether there is communication with an Orientus unit.

4.2 Attitude Indicator

The aircraft style attitude indicator shows roll and pitch through a virtual horizon. Heading is shown at the top. The units are degrees.

4.3 Status Indicator

This indicator shows any problems with Orientus. Once the filter has initialised it should show “Healthy”. Clicking on the indicator will show the detailed status flags.

5 Logging

Orientus Manager features a fully automatic logging system. Every time the serial port connect button is clicked Orientus Manager starts a new log file in either the current directory or the user's home directory. The log file is given the file name OrientusLog_date_time.anpp and contains all of the raw data received from Orientus in the AN packet protocol. The log files are closed when the serial port is disconnected. To convert these log files into easily accessible formats, the log converter dialog in the tools menu can be used, see section 8.4. The log converter dialog creates a folder and generates files in the CSV (comma seperated values) format that can be easily opened with Microsoft Excel, Openoffice, Matlab and most other data analysis programs.

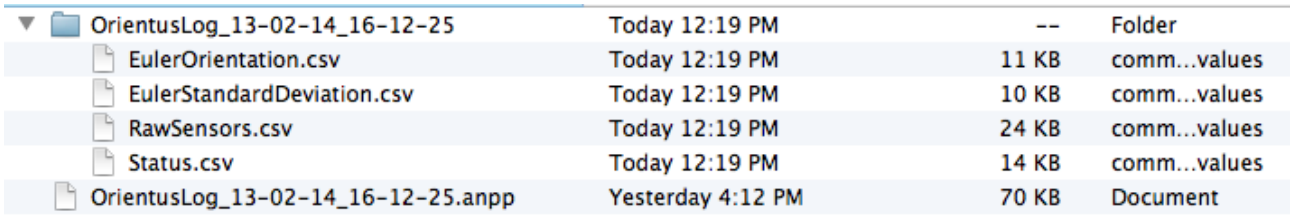

Illustration 2: Screenshot showing log file and log conversion folder

6 Views

The views menu contains a number of different options for viewing data from Orientus.

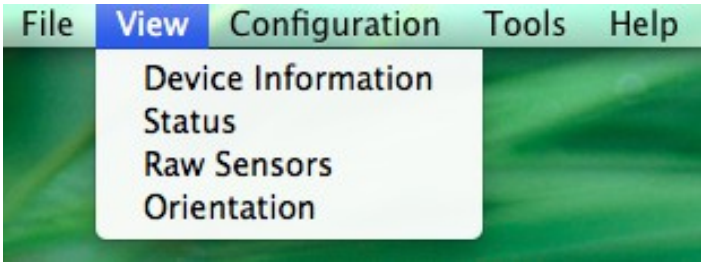

Illustration 3: Screenshot of Orientus Manager view menu

6.1 Device Information

Device information is mostly useful during technical support.

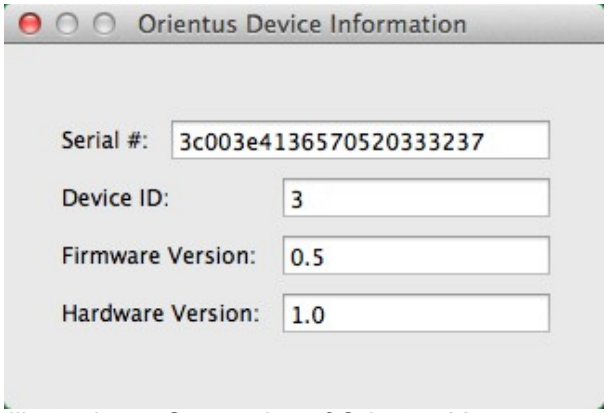

Illustration 4: Screenshot of Orientus Manager device information dialog

6.2 Status

Status shows Orientus's complete status as contained in the system state packet.

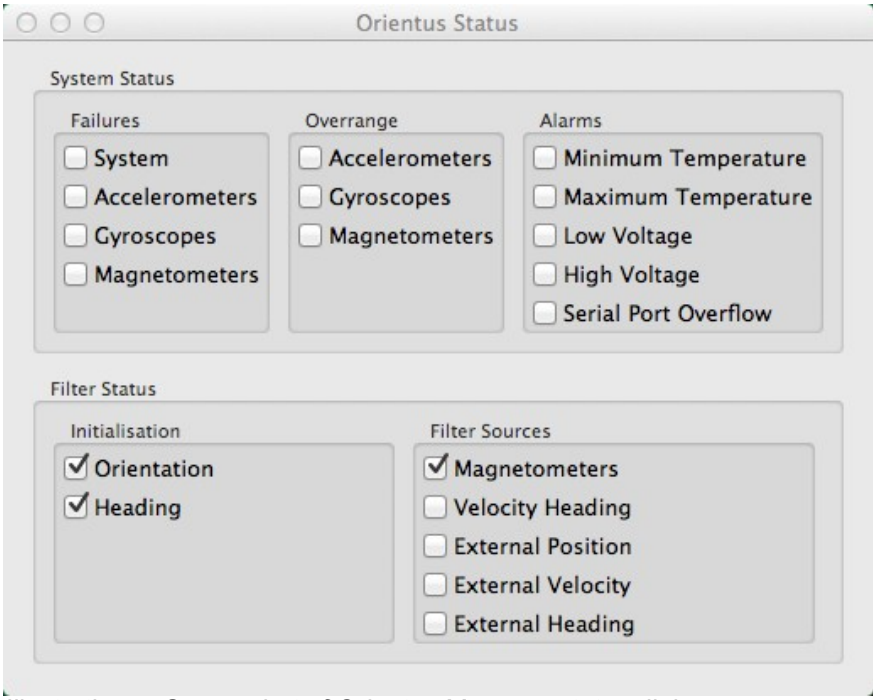

Illustration 5: Screenshot of Orientus Manager status dialog

6.3 Raw Sensors

Raw sensors shows the temperature calibrated raw sensor values.

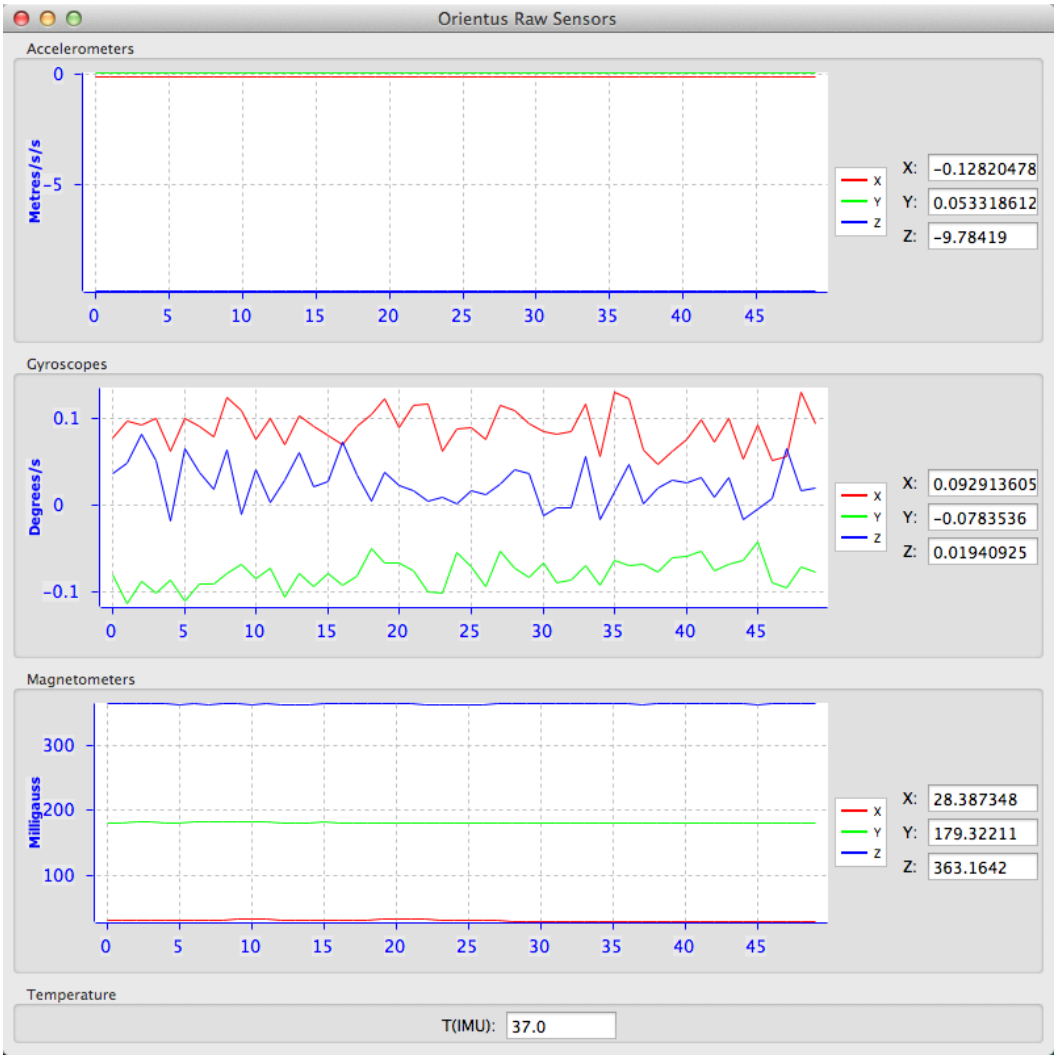

Illustration 6: Screenshot of Orientus Manager raw sensors dialog

6.4 Orientation

Orientation shows Orientus's orientation and angular velocity.

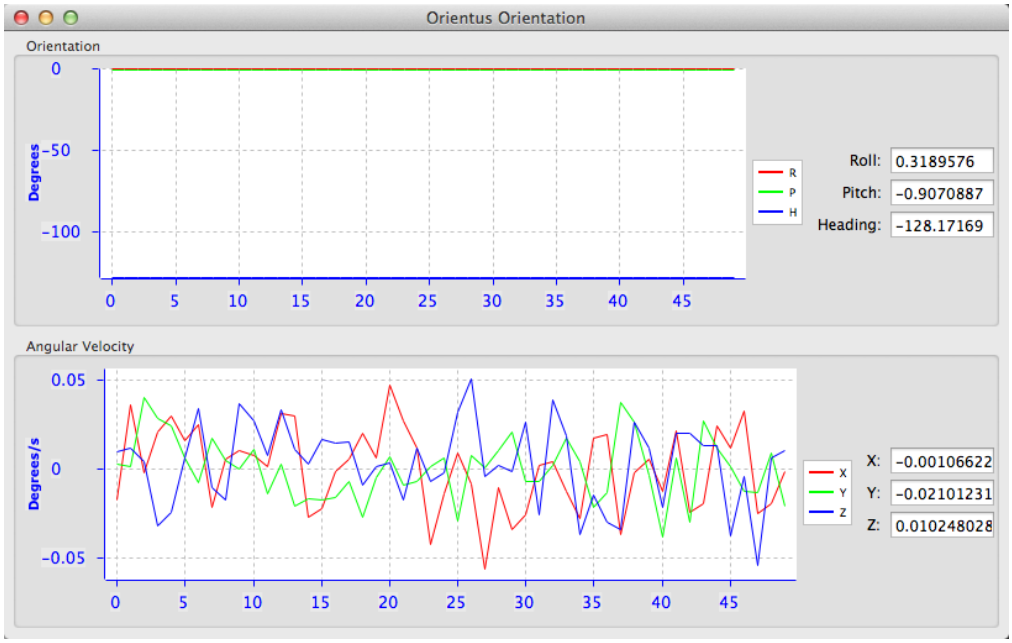

Illustration 7: Screenshot of Orientus Manager orientation dialog

7 Configuration

The configuration menu contains a number of dialogs for the configuration of Orientus.

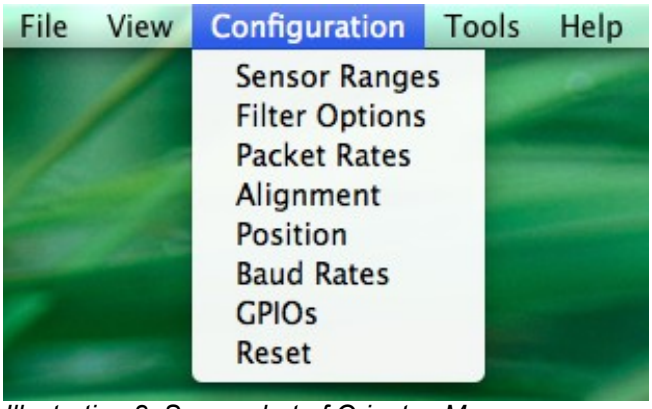

Illustration 8: Screenshot of Orientus Manager configuration menu

7.1 Sensor Ranges

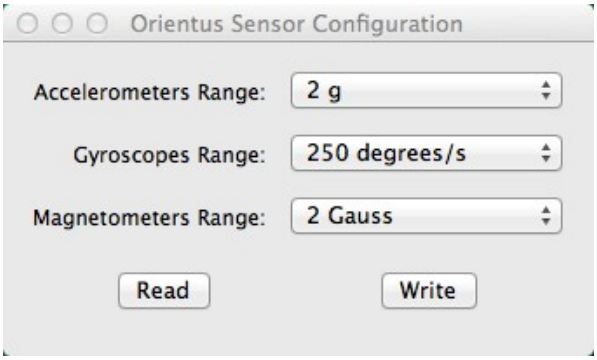

Illustration 9: Screenshot of Orientus Manager sensor ranges dialog

7.2 Filter Options

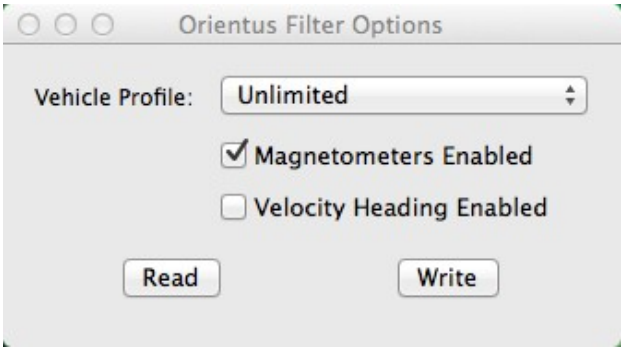

Illustration 10: Screenshot of Orientus Manager filter options dialog

7.3 Packet Rates

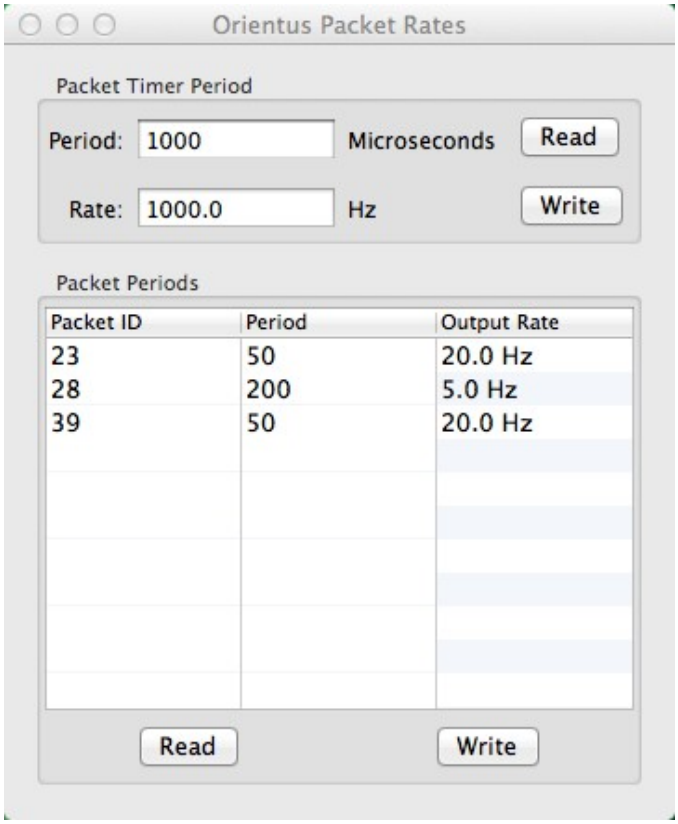

Illustration 11: Screenshot of Orientus Manager packet rates dialog

7.4 Alignment Configuration

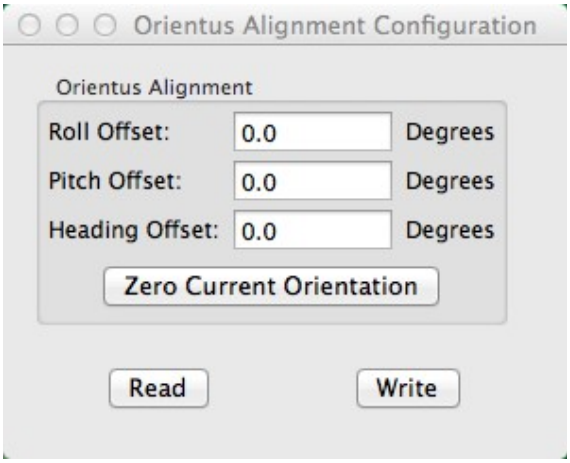

Illustration 12: Screenshot of Orientus Manager alignment dialog

7.5 Position

This dialog is used to set the position of Orientus. The position is used to update the world magnetic model and provide enhanced magnetic heading performance. For best performance through magnetic interference the position should be updated each time the unit is moved more than 50km from the previous position.

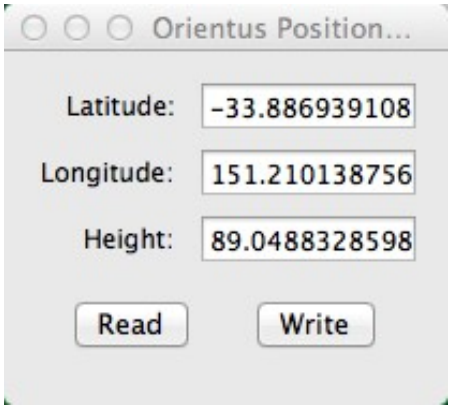

Illustration 13: Screenshot of Orientus Manager position dialog

7.6 Baud Rates

When changing baud rates, some windows machines are unable to function at the higher baud rates. It is recommended to test the baud rate first with the permanent box unticked. This way, if it is not possible to communicate at the higher baud rate, a power cycle can be used to revert to the previous baud rate.

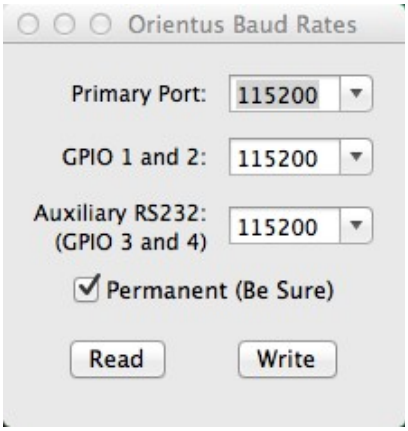

Illustration 14: Screenshot of Orientus Manager baud rates dialog

7.7 GPIO Configuration

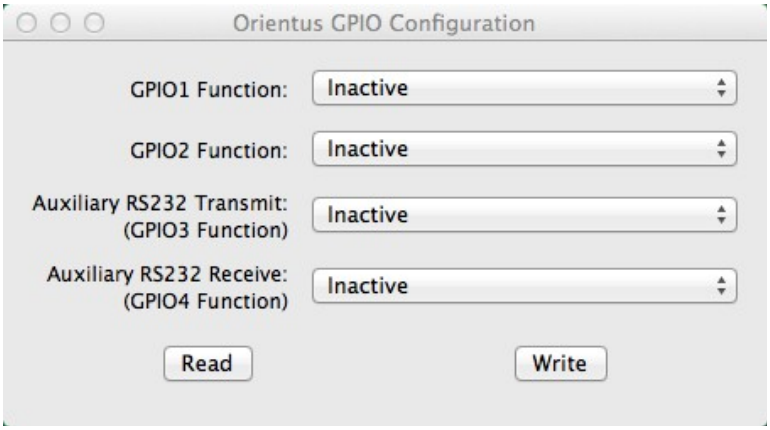

Illustration 15: Orientus Manager GPIO configuration dialog

7.8 Reset

Illustration 16: Screenshot of Orientus Manager reset dialog

8 Tools

The tools menu contains tools for performing procedures with Orientus.

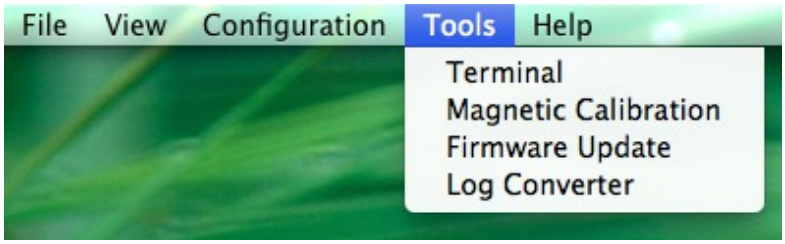

Illustration 17: Screenshot of Orientus Manager tools menu

8.1 Terminal

The terminal is only used during specialised technical support with Advanced Navigation engineers.

8.2 Magnetic Calibration

The magnetic calibration dialog allows the user to perform magnetic calibration as well as view and modify the magnetic calibration values.

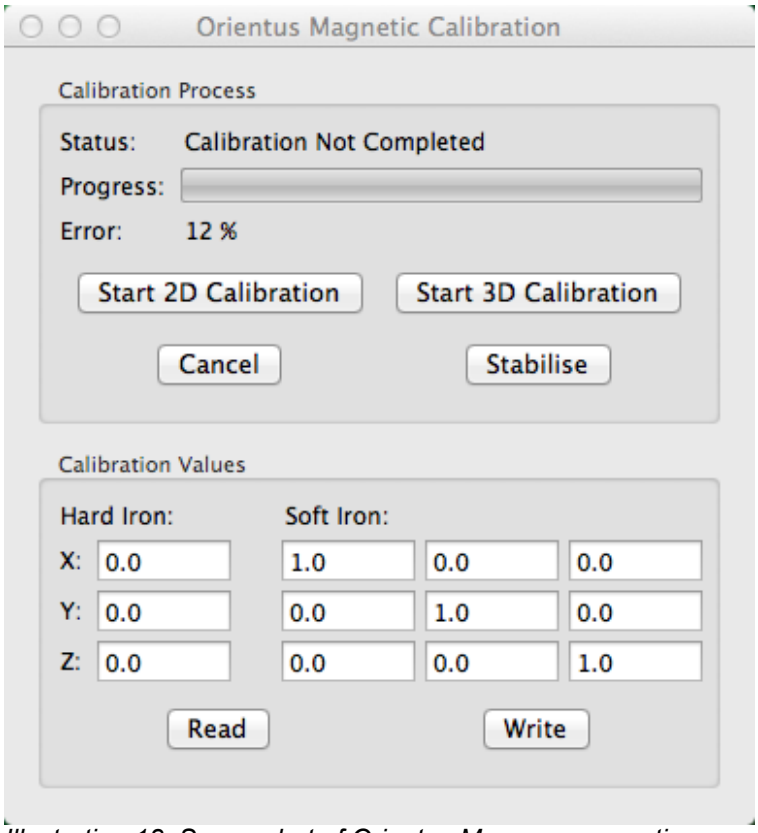

Illustration 18: Screenshot of Orientus Manager magnetic calibration dialog

8.3 Firmware Update

The firmware update dialog is used to update Orientus's firmware. Advanced Navigation firmware files have the extension .anfw.

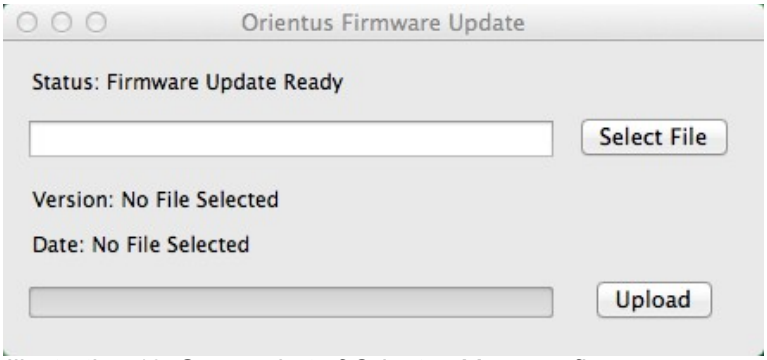

Illustration 19: Screenshot of Orientus Manager firmware update dialog

8.4 Log Converter

This tool allows the user to convert Orientus log files into CSV and KML format that are readable by many programs.

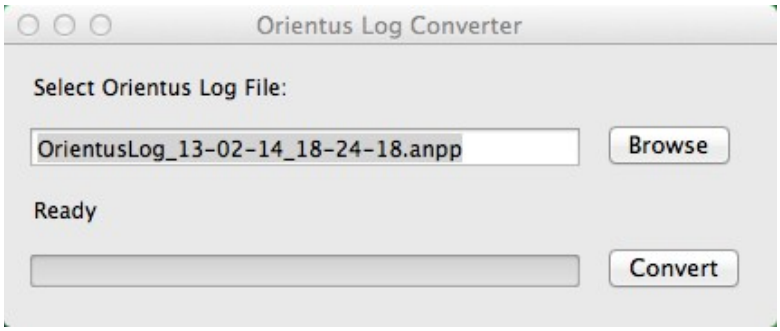

Illustration 20: Screenshot of Orientus Manager log converter dialog

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