

# PowerPROview

## Oracle

### How to Guide

26 January, 2008

# Table of Contents

Introduction.....	1
Connecting the Oracle .....	1
Recording .....	1
Configuring .....	1
Downloading Recorded Data .....	4
Erasing Recorded Data .....	5

# PowerPROview

## Oracle How To Guide

### **Introduction**

This manual deals with the various aspects of using the Oracle Data Recorder connected to the PowerPROview software. For information on operating the PowerPROview software see the PowerPROview Users Manual.

### **Connecting the Oracle**

The Oracle data Recorder can be connected by either using a POWERLink USB adapter or by connecting it to a Power Analyzer Pro's ESC port. If the Oracle is connected to a Pro the real time data streaming capability will not be available.

### **Recording**

Typically you want the Oracle to record data while placed inside of your aircraft. The Oracle is connected between your battery and the ESC to measure Volts and Amps. The two (2) Temp sensors can be used to monitor battery and motor temperature. The RPM Phase sensor connects to any one of the three motor wires to measure RPM. The ESC to Receiver connection can be connected to the Throttle input using a Y connector.



Recording is started once the current to the ESC exceeds a preset threshold. This threshold is set during your configuration of the Oracle.

Recording stops once power is removed or the memory is full.

The Oracle can hold multiple recordings so you can make multiple runs using different props, different ESC timing settings, or other setup adjustments.

### **Configuring**

When the PowerPROview software connects to a POWERLink with an Oracle connected or detects an Oracle plugged into a PA Pro's ESC port the Oracle toolbar will

appear . Click on the Configuration button  to read the current configuration from the Oracle and display the configuration window.

# PowerPROview

## Oracle How To Guide

Oracle Configuration Window:



Set the Temperature units as desired.

Set the RPM type to Phase with a Throttle Threshold of 0% and a Current Threshold of around 5 amps. If you are not using the Throttle input on the Oracle you must have the Throttle Threshold set to 0% to obtain RPM readings. Any setting other than zero without a throttle input will cause the RPM to not read. The RPM Thresholds are needed to prevent the ESC's brake signals at zero throttle from generating noise on the RPM reading. The RPM Phase sensor can not read very low RPM's because of the way brushless ESC's operate at low RPM's. So we set a threshold at which the RPM readings will be stable. You can use either or both threshold. If you do not use one then set its value to zero. You will need to use at least one threshold to avoid erroneous RPM readings at low RPM's.

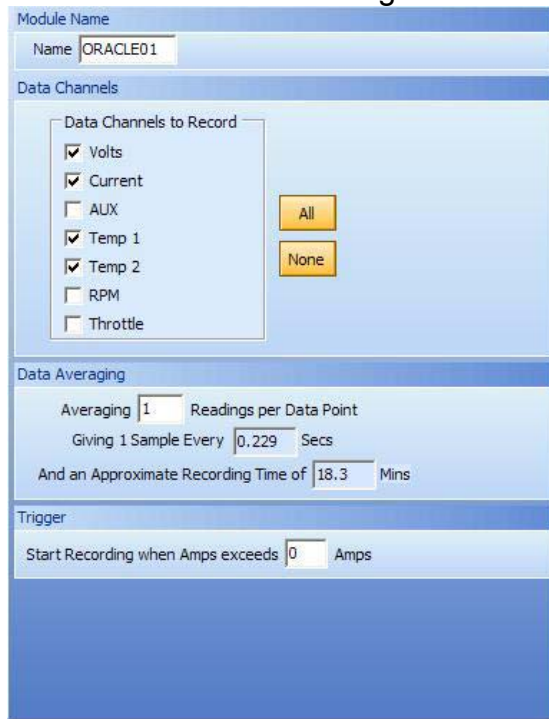
Select the number of poles for the motor being used so that the RPM readings come out correct. Select an RPM resolution as needed.

Ignore the AUX port settings unless you are using a custom device connected to the AUX port.

# PowerPROview

## Oracle How To Guide

Next click on the Recording tab.



The screenshot shows the 'Recording' tab of the PowerPROview Oracle configuration window. It is divided into four main sections: 'Module Name', 'Data Channels', 'Data Averaging', and 'Trigger'.  
1. 'Module Name': A text box labeled 'Name' containing the text 'ORACLE01'.  
2. 'Data Channels': A section titled 'Data Channels to Record' containing a list of checkboxes: 'Volts' (checked), 'Current' (checked), 'AUX' (unchecked), 'Temp 1' (checked), 'Temp 2' (checked), 'RPM' (unchecked), and 'Throttle' (unchecked). To the right of this list are two buttons: 'All' and 'None'.  
3. 'Data Averaging': A section with three input fields: 'Averaging' set to '1', 'Readings per Data Point' (empty), 'Giving 1 Sample Every' set to '0.229', and 'Secs' (empty). Below these is a summary line: 'And an Approximate Recording Time of 18.3 Mins'.  
4. 'Trigger': A section with a text box labeled 'Start Recording when Amps exceeds' set to '0' and 'Amps' (empty).

Give your Oracle a name for identification from other modules if you want or for the aircraft you are putting it in. The Name will be attached to the data when downloaded.

Select the channels that you want to record. Selecting more channels reduces the recording time as indicated in the Data averaging section.

Usually an Average of 1 reading (fastest) is fine but if your data is changing slowly and you want a longer recording change the number of readings per data point as needed.

Set the Trigger threshold amps at a value that you feel will be the point at which you want to start recording. Usually this is set at a value greater than the idle current of the motor.

Once you have the configuration the way you want it write it to the Oracle by clicking on



the Write Configuration To button. Your configuration will then be written to the Oracle.

Each time the configuration window is opened it will read the configuration from the Oracle. You can save different configurations to a file for quick and easy configuration by loading the configuration and writing it to the Oracle.


# PowerPROview

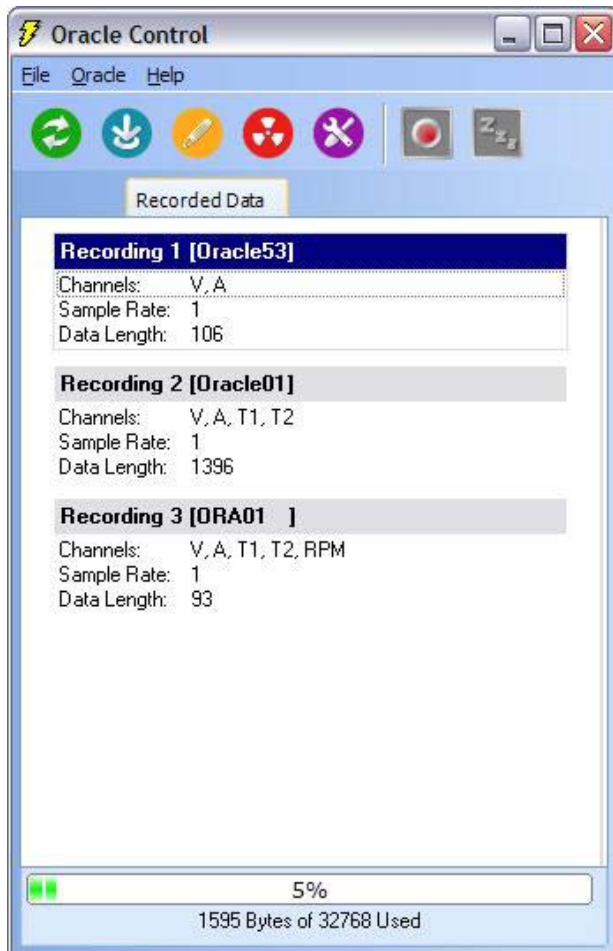
## Oracle How To Guide

### Downloading Recorded Data

With the Oracle plugged into either a PA Pro or a POWERLink, you will see the Oracle Toolbar appear in the PowerPROview window once you are connected to the device.



Click on the  button to open the Oracle control window.




You will see under “Recorded Data” information about your current recordings. What channels were recorded, sample rate, and the length of the recorded data. At the bottom you will see how much of the total memory that was used.

# PowerPROview

## Oracle How To Guide

Click on the recording to select the one that you wish to download. Either double click

the recording or click on the download button  and it will read the recorded data from the Oracle into the computers memory. You will see a please wait window while it is processing the data:



Once the data has been transferred to the computer a save dialog window will open. Type in the name of the file that you wish to save the data to and click Save. Your recorded data is now downloaded and saved to file where you can edit, view, export, or graph the data.

### **Erasing Recorded Data**

From either the Oracle toolbar or the Oracle Control window click on the Erase button



. It will ask you to confirm that you wish to permanently erase ALL recorded data in the Memory Module. Click yes and the recorded data will be erased.

Note that you can not erase just one recording; you can only erase all recordings.