trueHWIL Control Centre —Auto-Calibration Utility

Unzipping the files

The zip package should unzip to a folder containing files as shown below.

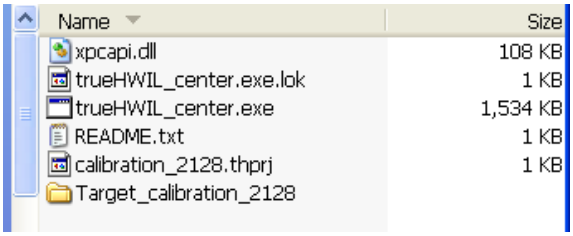

Figure 1 - Files from zip package

The *Target_calibration_2128* folder and the *calibration_2128* project file above it can go where you normally keep your project files, but they must be kept together.
You must place the files below into your Horizon directory.

- trueHWIL_center.exe
- trueHWIL_center.exe.lok
- xpcapi.dll

Open Calibration Project

First you must open a calibration project file. One has been provided for you in this package.

1. From The File menu, click **Open Project...**
2. Select a calibration project and click **Open**.

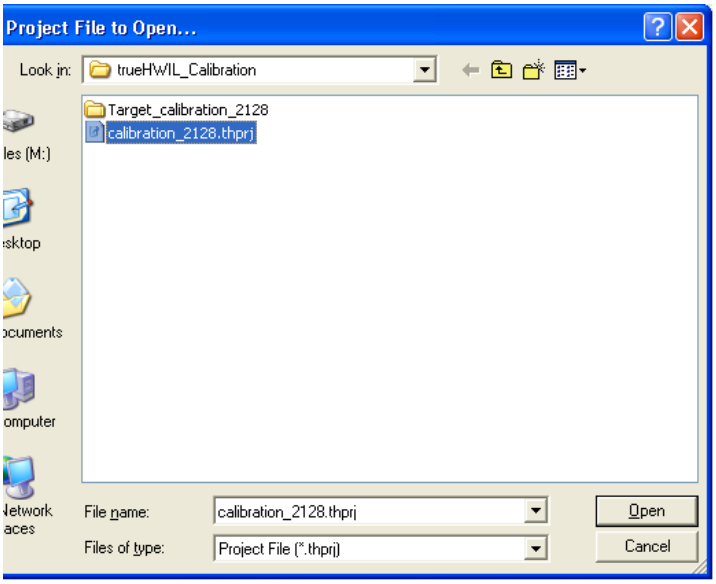

Figure 2 - Open a project

3. Select the "Configuration" tab.
4. In the **Load Options** frame, select **Load Model and Custom Parameters**.
5. Click **Load Target**...
6. Click **Start Simulation**

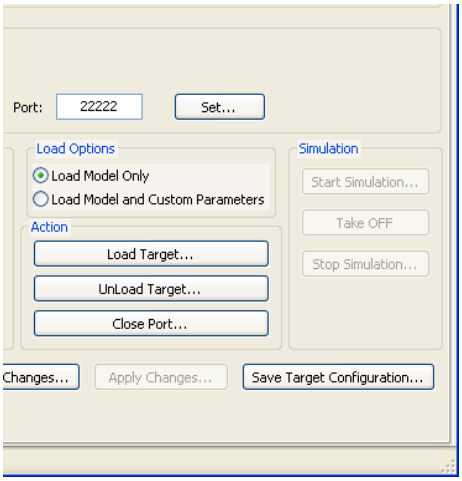

Figure 3 - Start simulation

Initialise Autopilot

1. Turn on power to the Analog board
2. Connect HyperTerminal
3. Turn on power to the Sensorless autopilot
4. Check to ensure the autopilot starts up normally without errors
5. Wait for the autopilot to complete its initialisation

Start Calibration

1. Select the **Auto Calibration** tab in the Control Centre.
2. Click **Start Calibration**

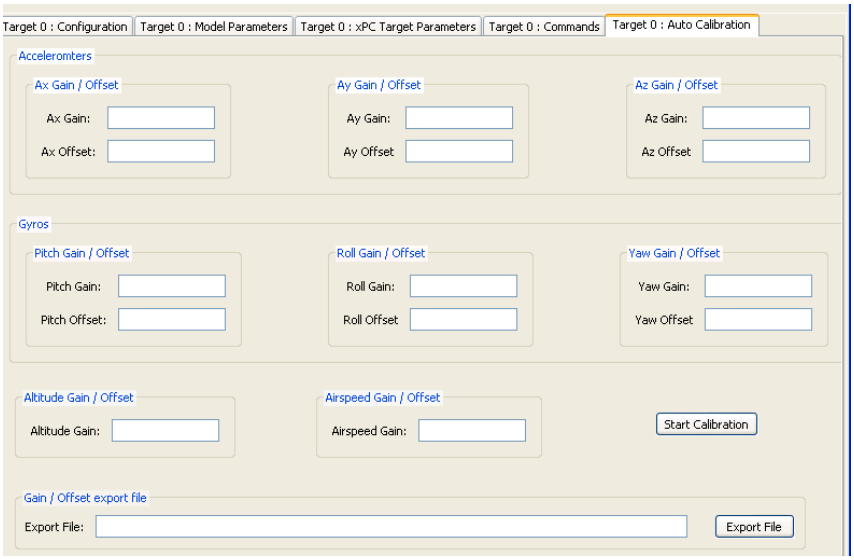

Figure 4 - Start Calibration

3. Select the UAV to connect to your sensorless autopilot
4. Choose the sensors you want to calibrate. You can select al of the sensors or individual sensors. Sometimes you may achieve successful calibration faster by calibrating just the accelerometers together and then the gyros together and then the pressure sensors together.
5. Wait.....
6. If calibration completes successfully all the gains and offsets that were selected to be calibrated should be placed in the text controls. Any sensors not chosen for calibration will have zero values.
7. If you calibrated all sensors together, successfully, you can now export those gains and offsets by clicking **Export File**
8. If you only calibrated some of the sensors in this calibration, you must manually edit the parameter file, using your new calibration values in the text boxes. If you attempt to export the file from a partial calibration like this, any previous values in the file which are zero in this calibration will be overwritten with zeros.

1. Those calibrated gains and offsets can then be loaded into the Simulation Model Parameters
2. Open your simulation model prm file
3. Select the **Model Parameters** tab
4. Click **Import M File...**
5. Select the calibration M file that you just generated from calibration.
6. This will load the calibrated gains and offsets into the Model Parameters grid

You can then save the simulation prm file.