DINAMO

RocRail & Dinamo OC32 (UK Signal Setup)

Contents

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Please note the following information in relation to the instructions provided in this document. These instructions were captured during the setup of a Dinamo OC32 DCC board (coupled to a Dinamo DS32) which was connected to a Windows 7 PC and a Dinamo U485 USB serial interface. The instructions in this document are also based on the configuration of a 4 aspect common negative LED aspect signal connected to the first 4 ports on the DS32.

Dinamo U485 Setup

Ensure you have installed the driver package first before you connect your U485 USB dongle to your PC. Once the drivers are installed when you connect your U485 to your PC it should install the drivers required automatically and register itself as a com port as per the example screen shot below
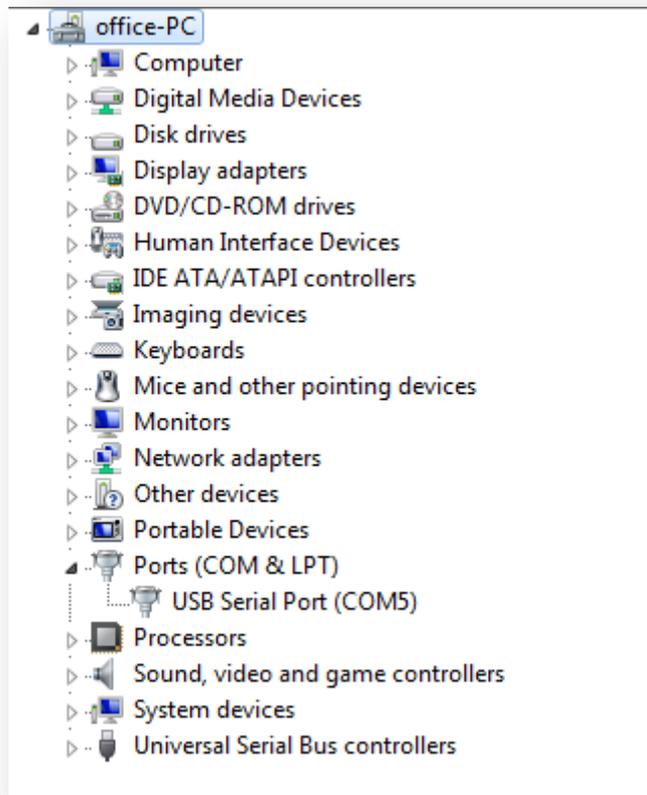
Dinamo OC32 Setup

Firstly once you have installed the OC32Config onto your PC you must then copy any definitions you may have into the same folder where OC32Config was installed, typically *c:\program files (x86)\OC32Config*

When you first launch OC32Config the default screen will be something similar to that shown below
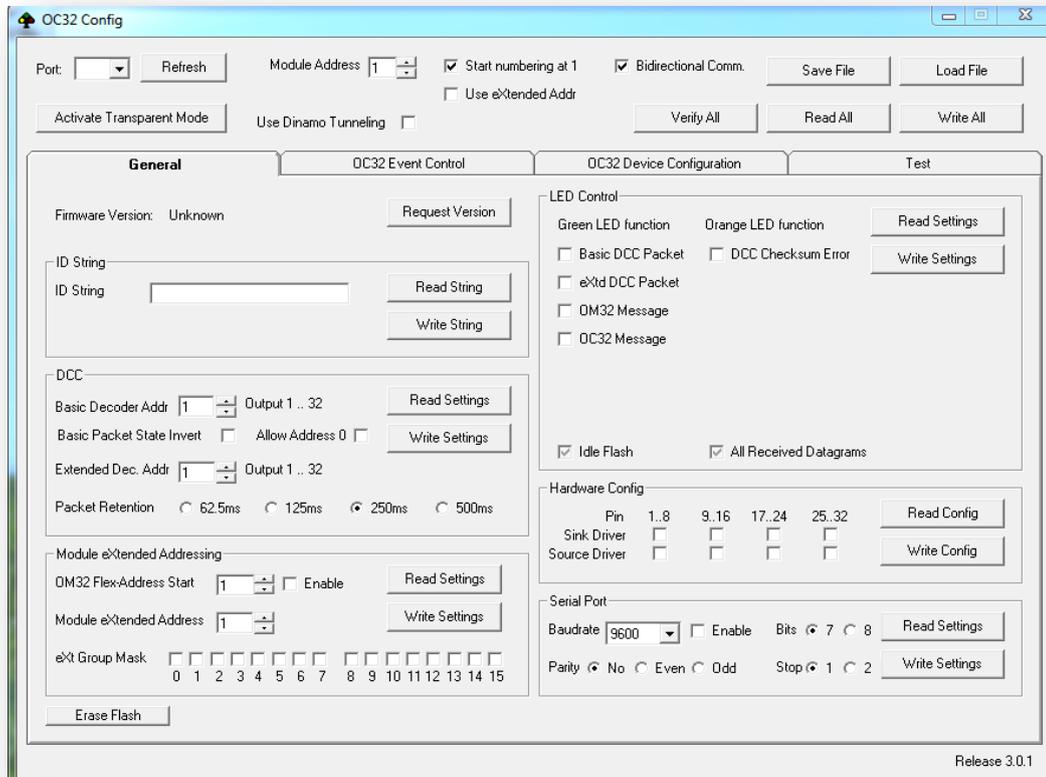
One important note to remember with the OC32Config application is that whatever are the settings configured within the software at the time you run it, will be written to the OC32 when you commit changes to the board. This means if you have previously set an option and the OC32Config does not have this set at the point you commit your changes the OC32 will not maintain the settings. To ensure this does not happen you can either always ensure you click the option "**Read All**" at the top of the screen before you make any changes and/or you can click "**Load File**" from the top of the screen and select a configuration file you have previously saved containing all the settings as you have defined them.

Firstly select the com port for you U485 device in the top left of the screen from the drop down list. If you com port is not listed hit the refresh button. (Note if you have another application running which is communicating with the com port this list may not display the U485 device, if so make sure no other applications are running which could be talking to the com port).

Next select the "**Request Version**" next to **Firmware Version** to perform a quick and easy validation you have communication with the OC32.

Assuming this reported back the current firmware of the OC32 you are ready to start to configure the board. As these instructions ae based on there being an U486 USB dongle connected to your PC you can ignore the **DCC** and **Module eXtended Addressing** section on the General tab and you just need to concentrate on the bottom right corner and the Serial Port settings. Here you need to enable and set the **serial port** settings

through which you will later configure Rocrail to communicate with the OC32, as described later in this document. For the purpose of using an OC32 with Rocrail the following settings are recommended

- Baud Rate = 38400
- Bits = 8
- Parity = No
- Stop = 1
- Enabled = True

Once these settings are written to the OC32 you should be able to communicate with Rocrail once the OC32 is configured as a controller with that software. Please note that a baud rate of 38400 appears to be the highest value that will work with Rocrail.

Next on this General tab we need to setup the "*hardware config*" in line with the peripheral devices to be connected. For the purpose of these instructions and as outlined at the start of this document the LED aspect lights used were of a common negative type. This type of LED light requires the default sink driver chips to be changed on the OC32 for a set of resistor array chips. If your LED lights are common positive then the default sink driver chips do not need to be changed. If you are using the default sink drivers the under the "Hardware Config" section on the general tab ensure the option next to sink driver is ticked for each bank of 8 ports you have your LED lights connected. If you have replaced the sink driver chips with resistor arrays then you leave all the tick boxes blank for each set of 8 ports you have you LEDs connected.

In the box entitled **ID String** you can enter a word here that can be written to the OC32 by means of an descriptive identifier. This option does not a requirement in order for the OC32 and rocrail to function together however if in te future there are more than one OC32 modules connected to your PC it may be advisable to set a string ID for each of your OC32 board in order to easily identify which one you are communicating with.

It is recommended at this point that you click the "*Save File*" button at the top of the page and create a configuration file for your basic OC32 settings. Once you have saved these basic settings you should click the "*Write All*" button to commit the changes to the OC32 board.
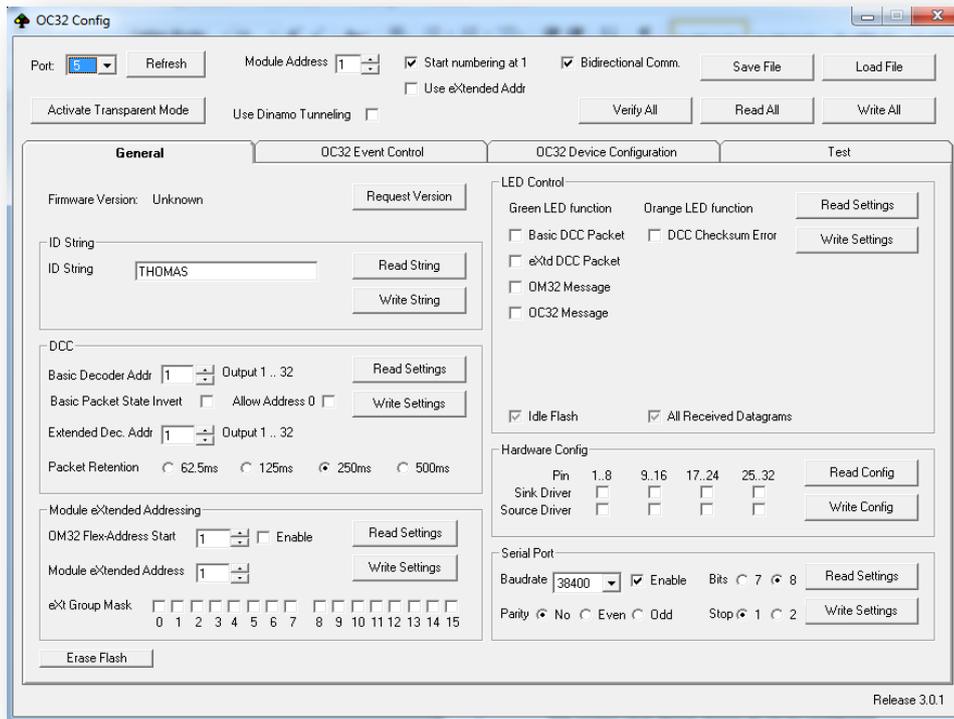
The screen shot above shows an OC32 configured to run on port 5 (the com port the U485 has registered itself on). There is an *ID String* set to Thomas and the *serial port* configuration is set to the following

- Baudrate = 38400
- Enabled = True
- Bits = 8
- Parity = No
- Stop = 1

This example also shows that the LED signals are all common negative and thus all the boxes under the *Hardware Config* box have been left blank. This example screen shot also shows that as this is the only OC32 board connected the module address is set to 1 as per the block of red switches on the board (see bottom right of the image below as an example)
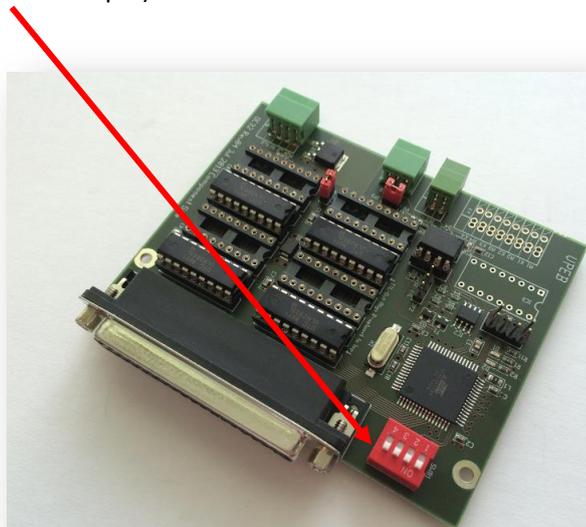
In readiness for configuring the ports it is worth just quickly reviewing the physical connecting of the wires for an LED signal. As mentioned earlier this instructions are based on a 4 aspect common negative LED signal connected to a DS32 and controlled by an OC32 DCC module. The common wire from the LED signal was connected to this terminal block on the DS32 and the signal's LED colour wires were connected as follows

Red	Green	Yellow	Double Yellow
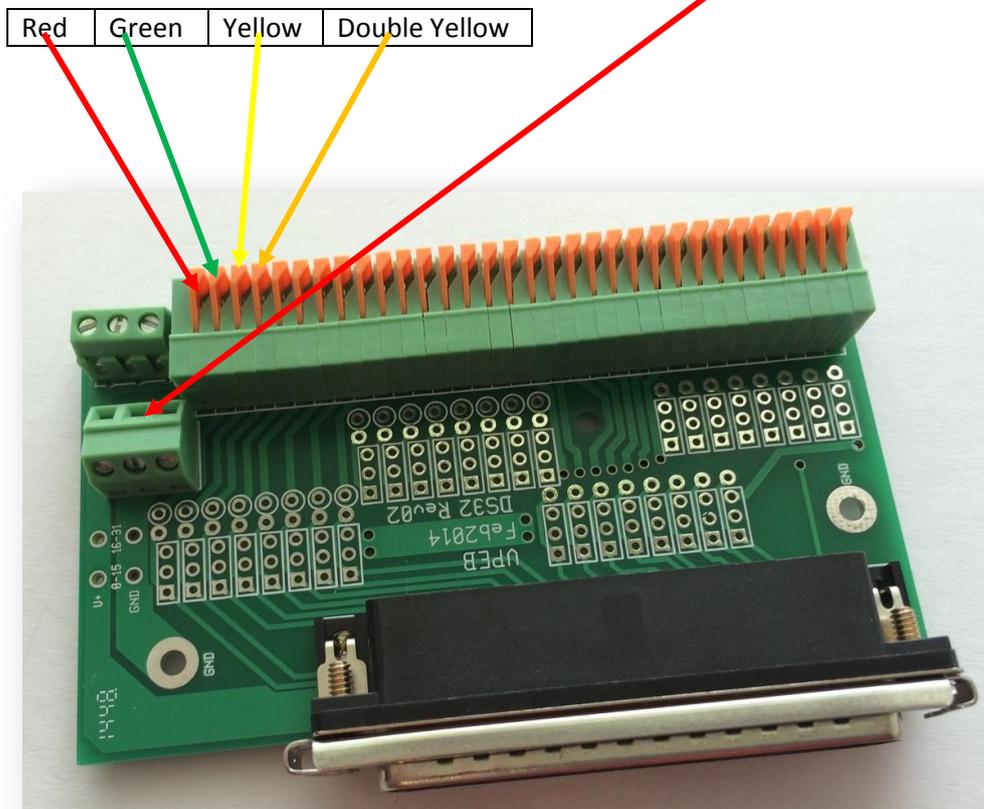
The next stage is to configure the ports on the OC32 so as they will drive the LED signal in the manner expected.

OC32 Config

Port: [5] [Refresh]   Module Address [1]   ☑ Start numbering at 1   ☑ Bidirectional Comm.   [Save File] [Load File]

☐ Use eXtended Addr

[Activate Transparent Mode]   Use Dinamo Tunneling ☐   [Verify All] [Read All] [Write All]

| General | OC32 Event Control | **OC32 Device Configuration** | Test |

[_____] ▼ [Load Device] [Reload DD]   Definitions Loaded: Generic 2015/06/10

Pin [1] [(4)GB: 4 Aspect [N+0]=Red_____]   Device Pin [1]   Device Name [(4)GB: 4 Aspect_____]

| | Serial | B-DCC | X-DCC |
Nr Of Addresses   [1]   [1]   [1]   ☑ Show Details   [Save Device] [Read Device] [Write Device]

Address   1.1   1   1   1   [Read All Devices] [Write All Devices]

Init [0]   Aspects ○ 0 ◉ 4 ○ 12   [Get Pin Config] [Set Pin Config]

Aspect [0] [Stop_____]   [Test] [Write Single]

| Clear | Servo | **PWM** | Input |

#	Instruction						
0	Multibit 4 ▼	☑	0	1	0	0	00:00.00
1	- ▼		0	0	0	0	00:00.00
2	- ▼		0	0	0	0	00:00.00
3	- ▼		0	0	0	0	00:00.00
4	- ▼		0	0	0	0	00:00.00
5	- ▼		0	0	0	0	00:00.00
6	- ▼		0	0	0	0	00:00.00
7	- ▼		0	0	0	0	00:00.00
8	- ▼		0	0	0	0	00:00.00

Drive Mode
◉ Logaritmic   ○ Linear

Acceleration Mode
◉ Logaritmic   ○ Linear

☐ Inverted

Acceleration [28]
Off - Level [0]
On-Level [31]

Initial Level [0]

[slider] < [0]   Level   [Jump]
☐ Slow

Release 3.0.1

RocRail - Controller Setup

These setup instructions are based on the assumption you have the RS485 USB interface connected to your PC and that the drivers are loaded with the USB device registering itself in Windows as a COM port.

First you need to add the OC32 as a controller to RocRail. This is done via selecting *File* from the menu at the top and then selecting *Rocrail Properties*. On the window that will then appears select the *Controller* tab and the window should look similar to the screenshot below.
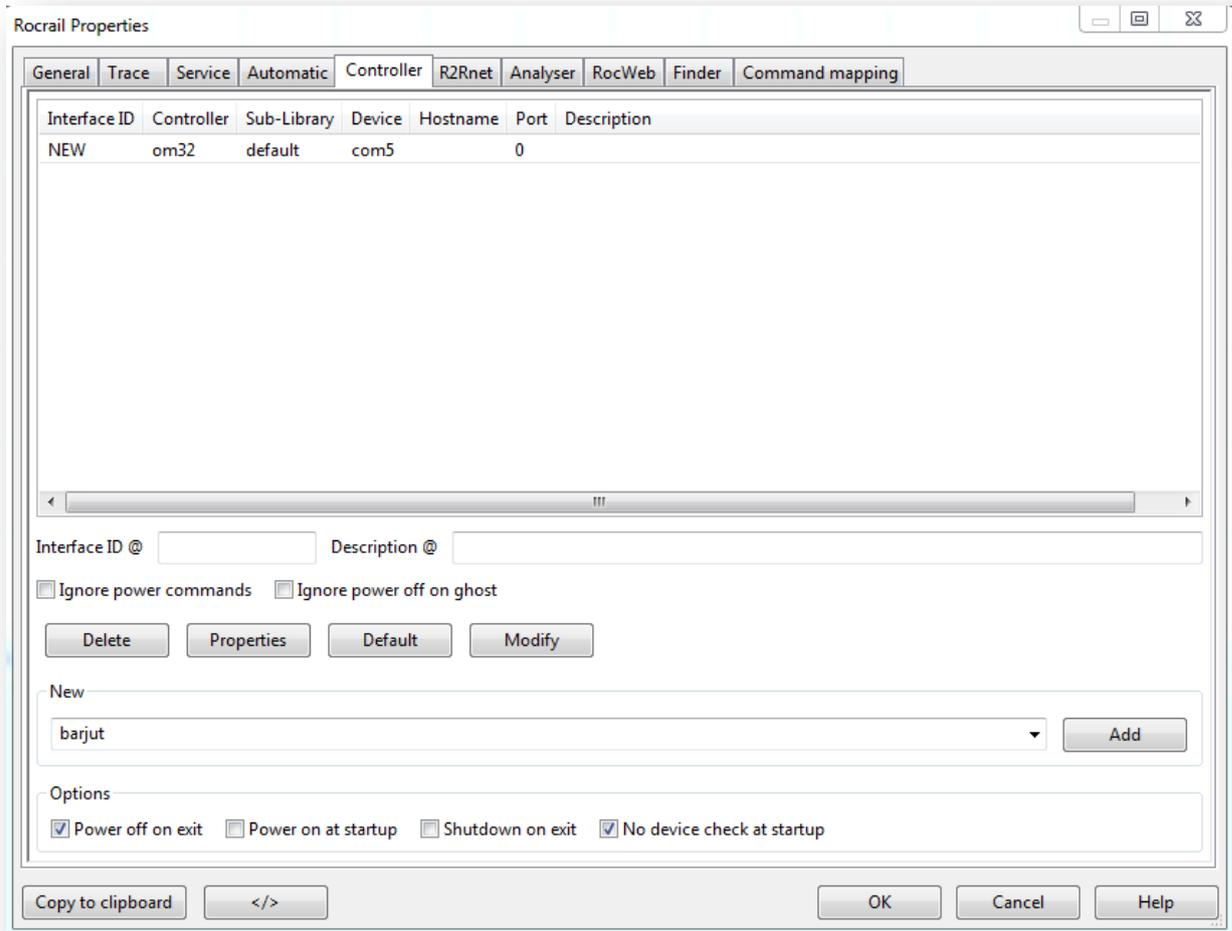
Towards the bottom of this window you will see a button labelled *Add* and to the left of this a drop down box. Here select "*OM32*" from the list and then clock *Add* (As per the screenshot below)
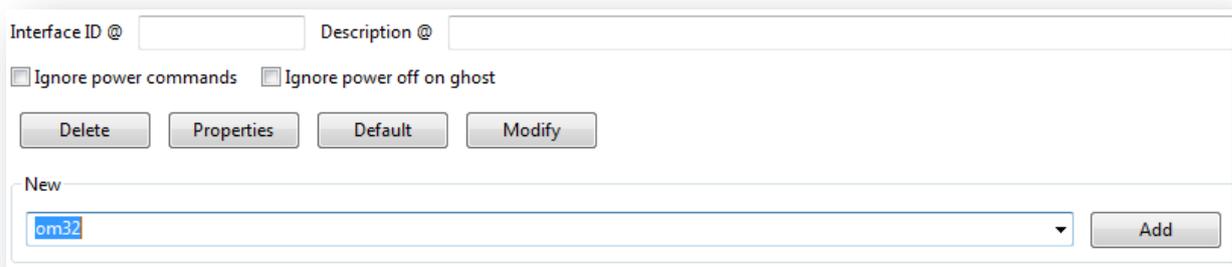
The new controller should now be listed, alongside any other controller you already have defined, and will most likely have the interface ID of NEW. Select the newly added controller from the list at the top of the window and then click the **properties** button the a window similar to that shown below should appear
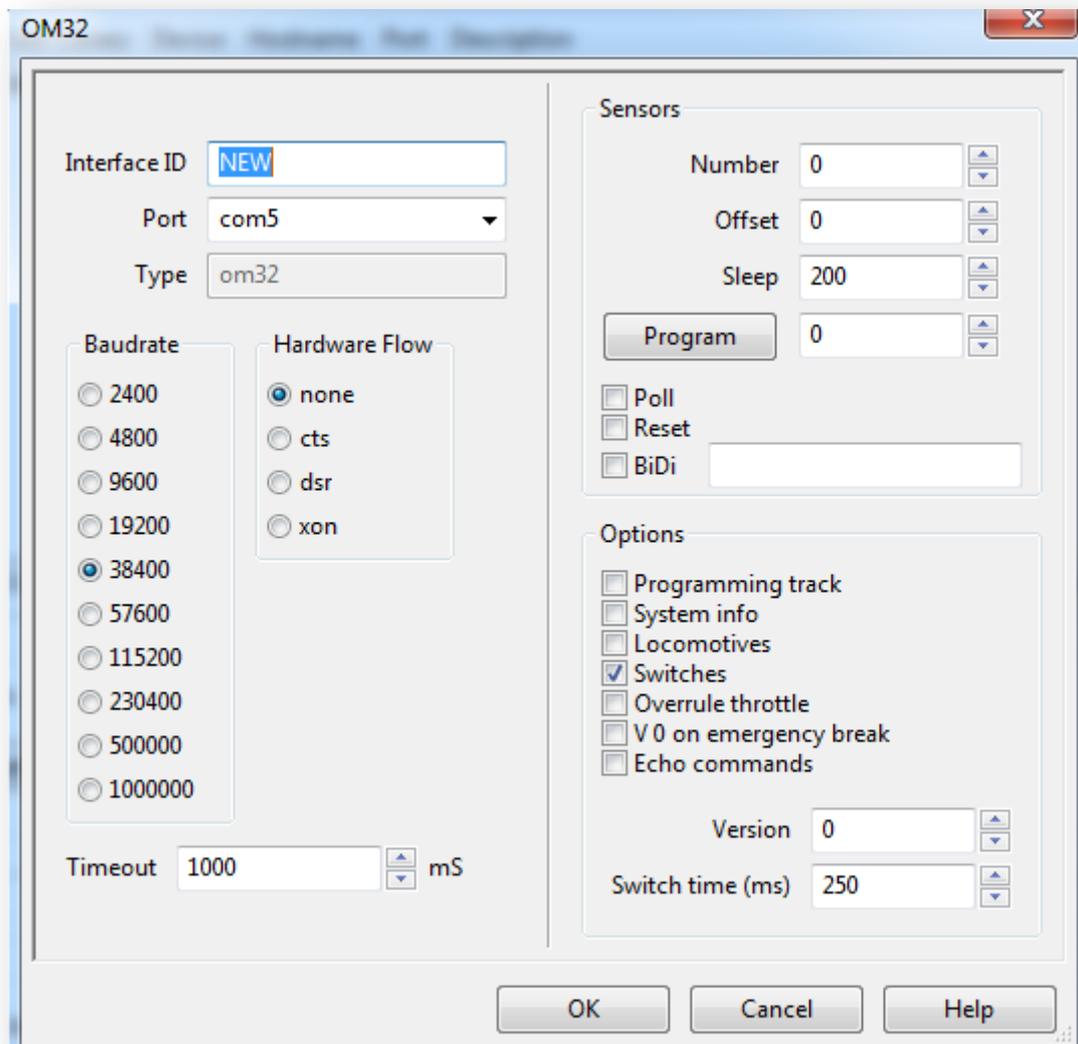
Here is where you configure the communication settings for Rocrail to talk to the OC32. It is recommended you change the interface ID to something other than NEW, for example change it to OC32. You need to change the Port to that which the RS485 has registered itself to. The drop down may or may not list all the com ports Rocrail has found, if it does not provide a list then you can manually enter the com port number by entering "COM" and then the number of the port, for example COM5.

Now select the baud rate and the flow control as per you configured in the OC32Config application. For Rocrail the maximum baud rate is 38400.

Once done click the OK button to save the changes.

Signal Configuration

(The following screenshot were taken from a signal which was configured as a 4 aspect signal)

Next add a signal item to your track design and the select the properties for that signal.

On the window that appears select the **Interface** tab and the screen should look similar to below
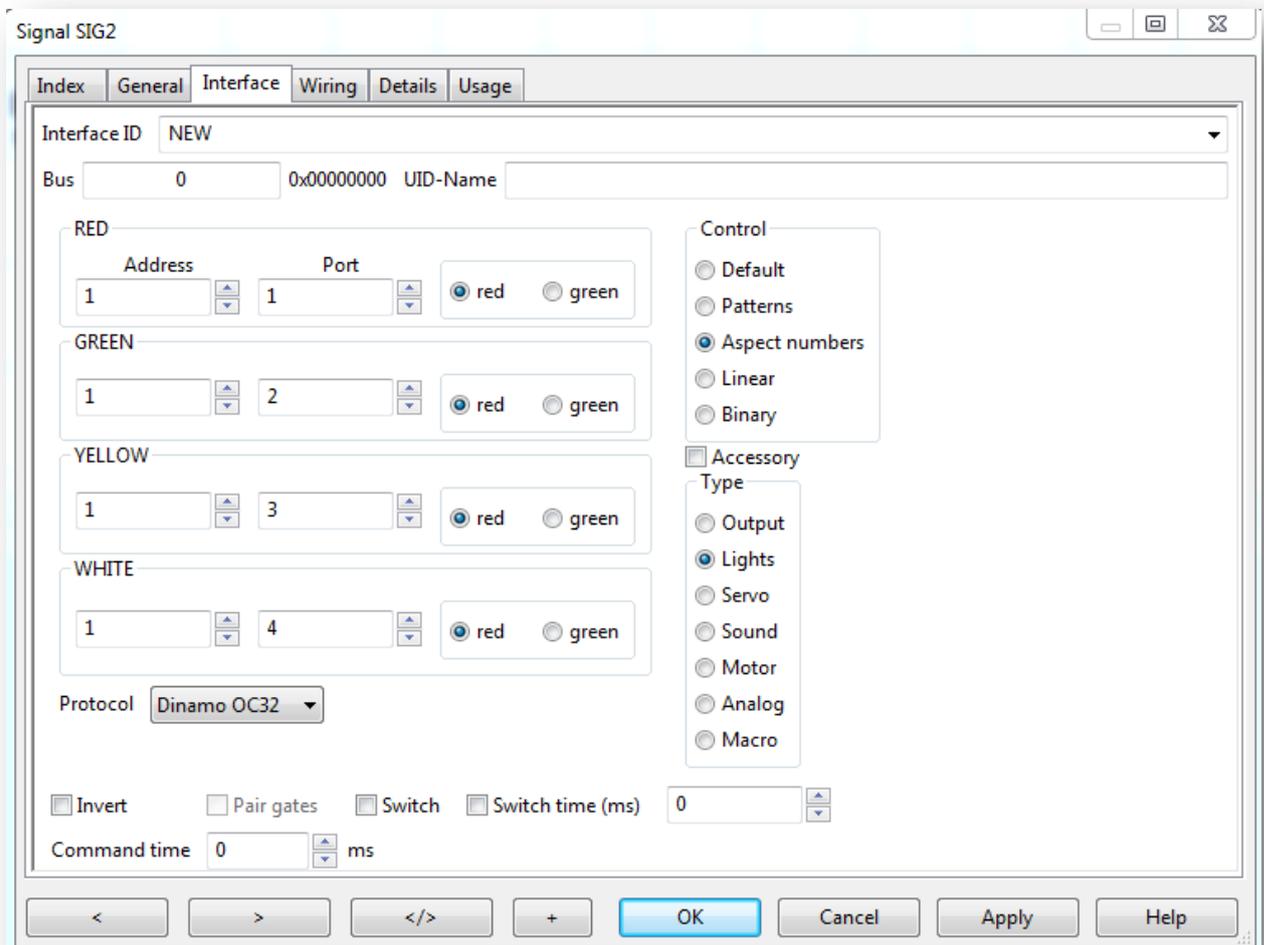
- Where it says **Interface ID** at the top of the window, select the new OC32 controller you have just created from the drop down list.
- Towards the bottom of this window is the word **protocol**, next to this is a drop down list select "**Dinamo OC32**" from the list.
- Next untick the box next to the word **Accessory** and then select **Lights** from the list which is now available to select.
- Next under the box headed **Control** select **Aspect Numbers**.

The final actions on this window are to set the address and port details. In Rocrail double yellow is handled by the option listed as WHITE. In the example shown in the diagram above there is only one OC32 module connected and its address is set as 1. The first 4 ports have been configured in OC32Config as a 4 aspect signal with the following details

- Port 1 = Red
- Port 2 = Green

- Port 3 = Yellow
- Port 4 = Double Yellow

In the Address box you enter the address of the OC32 module, 1 in this example, and for the ports you enter the corresponding numbers to equal that of the lights as per configured in OC32Config. Leave the bus number at the top of the windows as zero and UID-Name blank. Also the Invert, Pair gates, Switch & Switch Time (ms) are all left unticked along with leaving the Command time and time next to the option Switch Time (ms) set to zero. The Options of Red and Green next to each of the port addresses are also left as default which is Red.

Next we need to configure the aspect order so as Rocrail displays the light sequence in the correct order.

Select the Details tab and the window should change to something like the one shown below
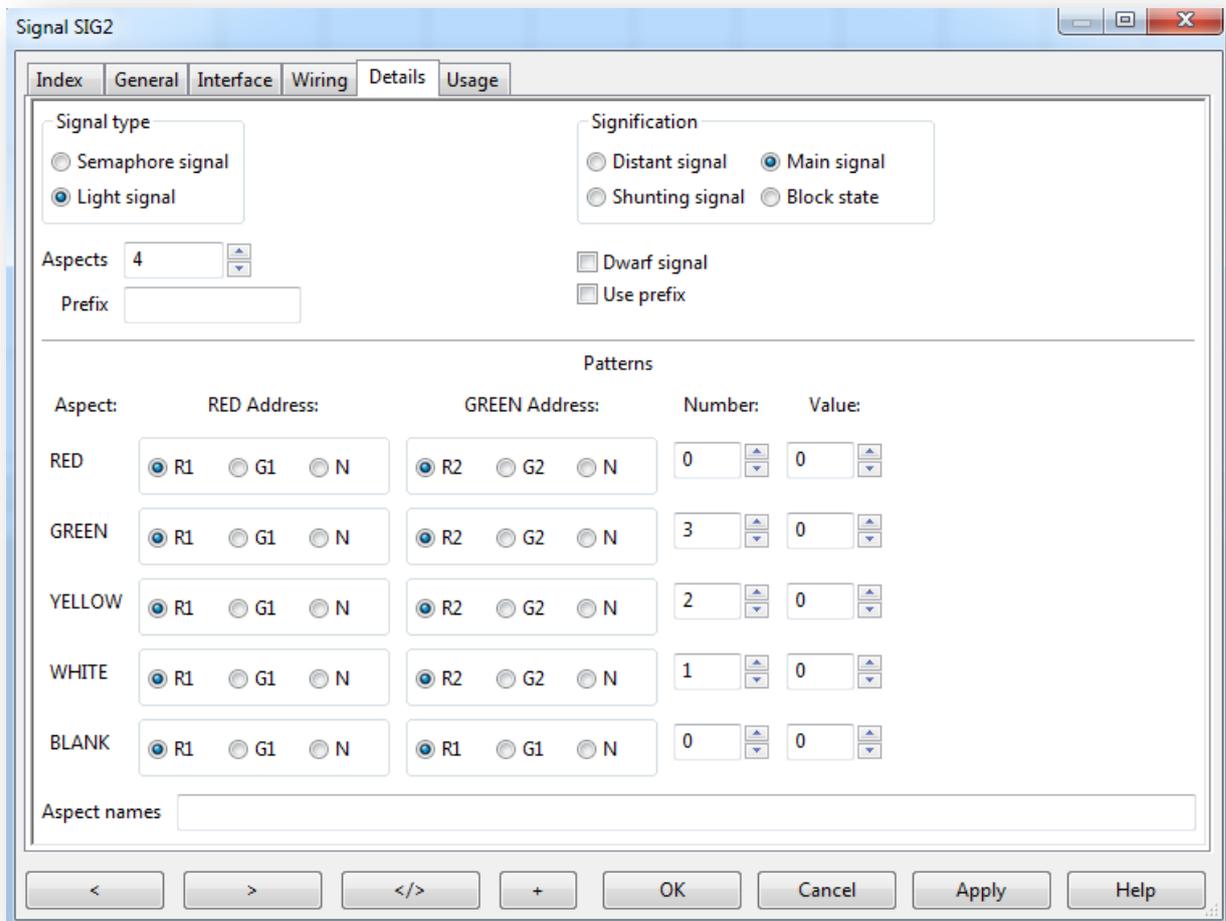
- Firstly set the number of aspects to match that of your signal next to the word *Aspect.* (** This document has been written using a 4 aspect signal detail around setting up a signal with more than 4 aspects you will need to experiment to work out the correct settings)
- Make sure the *Signal Type* is set to *Light Signal*
- Assuming you signal is a main signal make sure the *Signification* is set to *Main Signal*

Next we need to set the aspect order, this is done by entering the values under the Number column. In this column the first colour needs to be set to zero and then 1,2,3 and so on. So in the example above this has the following aspect order set

- 0 = Red
- 1 = White (Double Yellow)
- 2 = Yellow
- 3 = Green