

AWB USB Relay Help

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1 Introduction

I created this application to control a USB relay such as the one shown below in my observatory for switching on and off a mains electricity fed 230 volt AC (red bulb) lamp but it could be used for switching on an off any similar device.



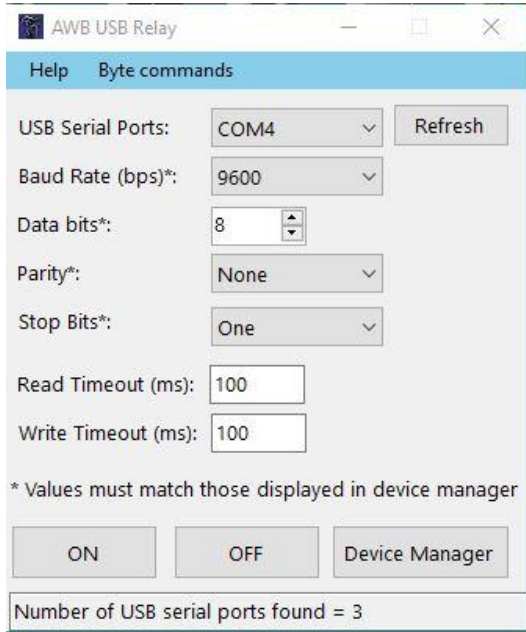
Note that this application only recognises USB Serial (recognised by Windows as COM port) relays.

This is particularly useful when I am remotely controlling my scope from the office as I prefer to be able to observe the scope via a webcam when I slew the scope remotely. As webcams generally don't perform well in low light being able to switch on a (red) light via this application, perform the slew and monitor it via a webcam, and then switch the light off again gives reassurance that all is well.

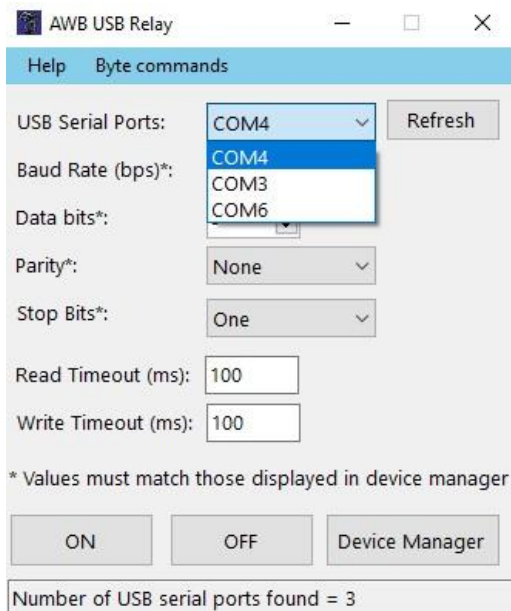
For details of the relay itself and associated wiring see section 4.

2 Startup

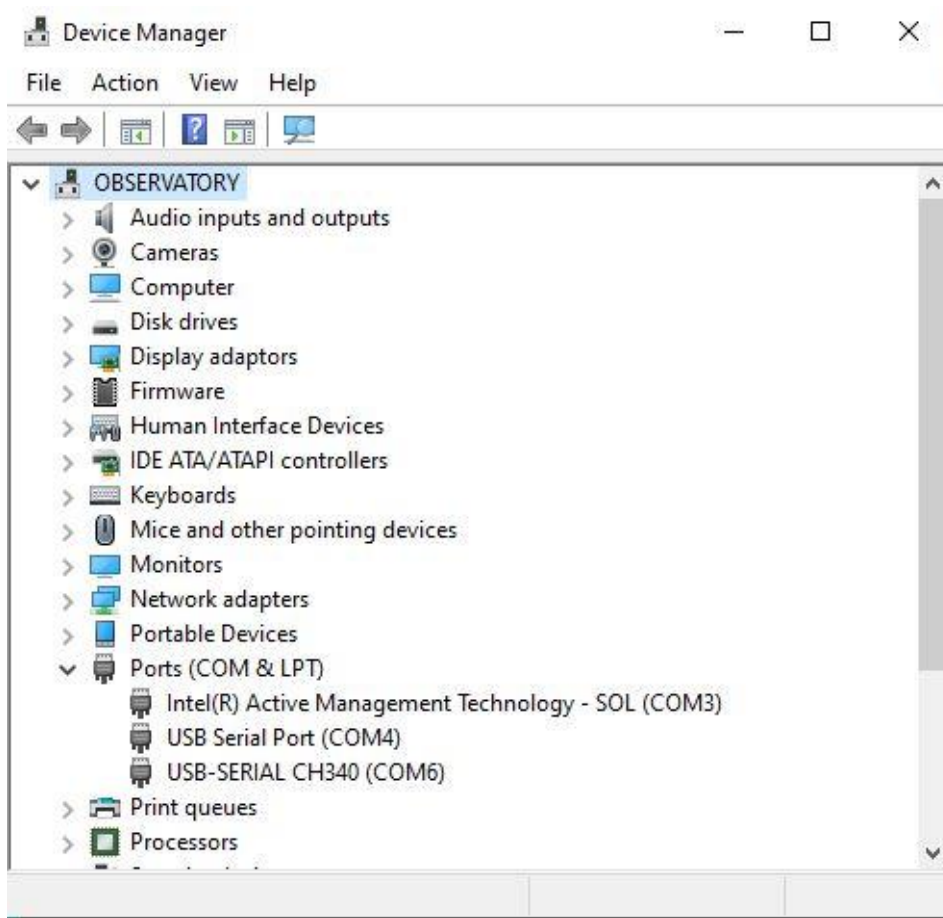
Upon starting the *AWB USB Relay* application, the following screen will be presented:



In the example above the application has found three USB Serial ports. The screen shot below shows the drop list that has been populated with three discovered ports.

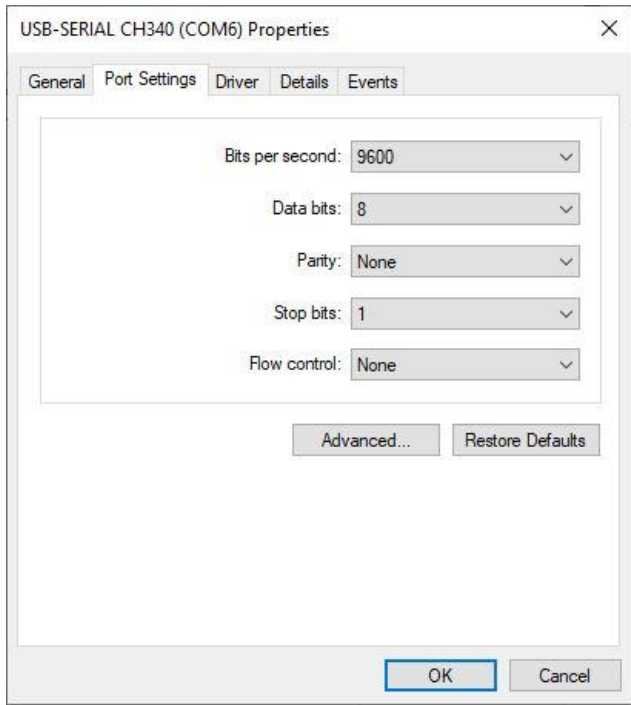


To select the correct COM port (i.e. the COM port that is the USB relay) click on the Device Manager button which will invoke the Windows device manager (or manually start the device manager from windows). An example is shown below.

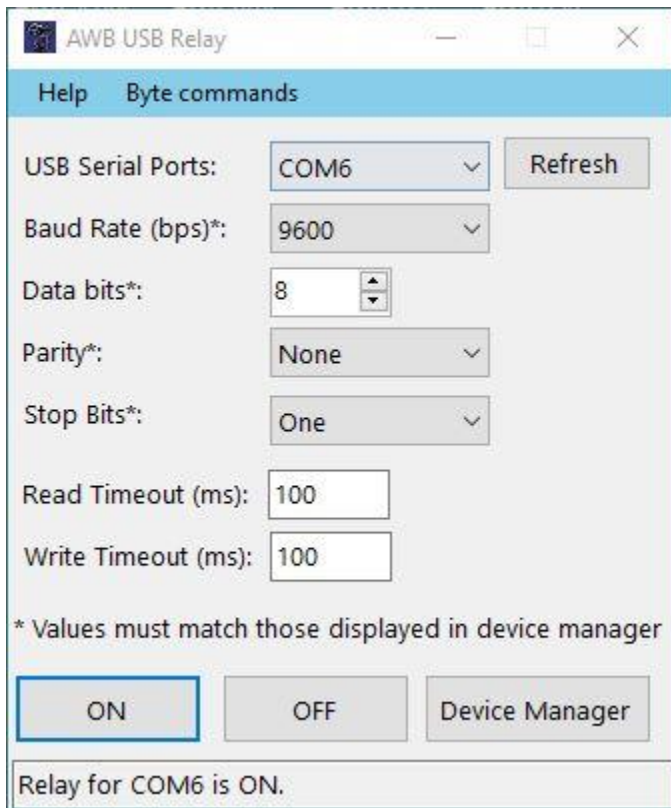


In this example the COM port that we require is COM6, therefore select COM6 from the drop list on the application.

It is vital that the Baud rate (bps), Data bits, Parity and stop bits selected on the application match the COM6 properties. To check this right click on the COM6 entry in the device manager and select the *Properties* menu option. This will display the screen below. If necessary change the application displayed values to match (do **not** change the values displayed in the device manager).

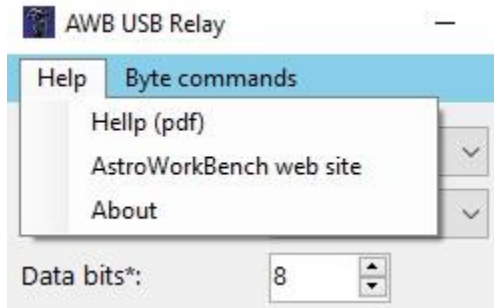


Once the correct COM port has been selected and the property values verified (and changed on the app if necessary) you may now click ON and OFF to switch the relay on / off. An example is shown below.

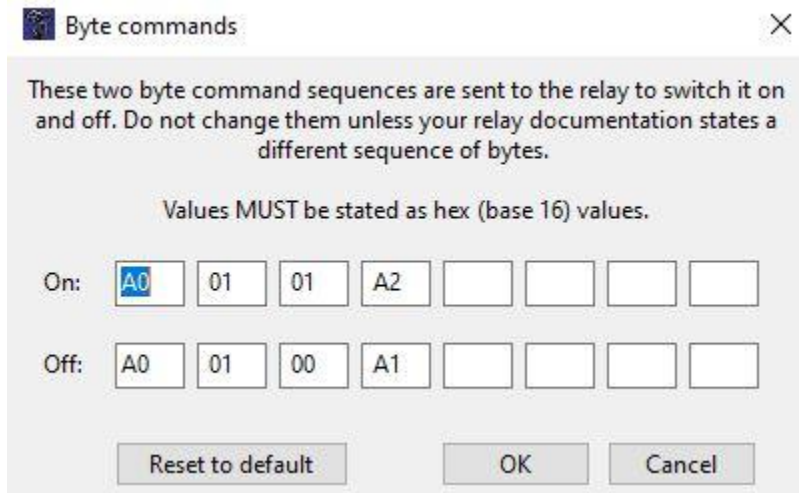


3 Menu Options

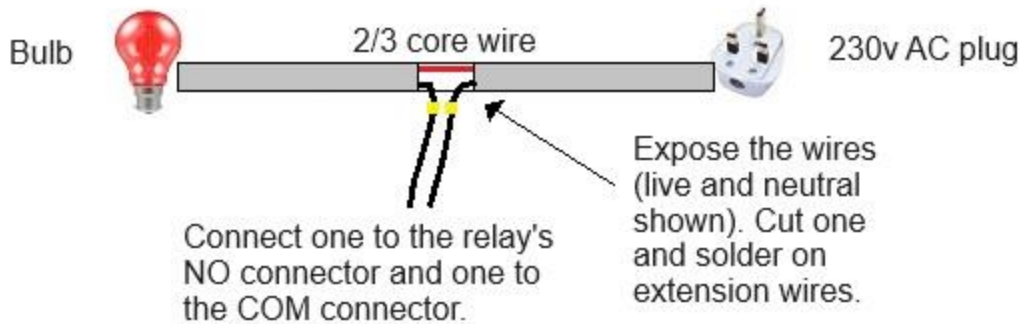
The *Help* menu displays the following options which are self-explanatory.



The *Byte Commands* menu displays the following screen:



This screen defines the byte sequences that are sent by the application to the selected COM port when you click the ON or OFF buttons. Your relay may require a different sequence of bytes to be sent (check the relay documentation) , in which case you may modify them here. Clicking the OK button will save any changes you have made.



Alternate method: Rather than cutting the cable sheath to expose the wires you may of course just connect two lengths of cable together and extend one of the wires at the join. Either way just make certain there is no exposed bare wire after you have prepared the cables and all connections are fully insulated.

At this point you are ready to go, just insert the relay into a USB port, check that a driver has been installed by checking the Windows device manager, and then you can use the application to control your device.

IMPORTANT:

- Ensure all wires are correctly insulated and absolutely no bare (or soldered) wire is visible at any point. Additional insulating sleeves should be used over all wiring;
- The relay is obviously receiving mains power, take all electrical safety precautions when handling the relay. It should be housed in an insulated enclosure if possible;
- Relays will be rated for the current and voltage they can handle, ensure the relay can handle the voltage and current you are intending to pump through it;
- Check the manufactures' documentation for safe usage practises.

5 Further Information

Please visit my website www.astroworkbench.co.uk for further applications, documents and articles.

Thanks.

Keith.