

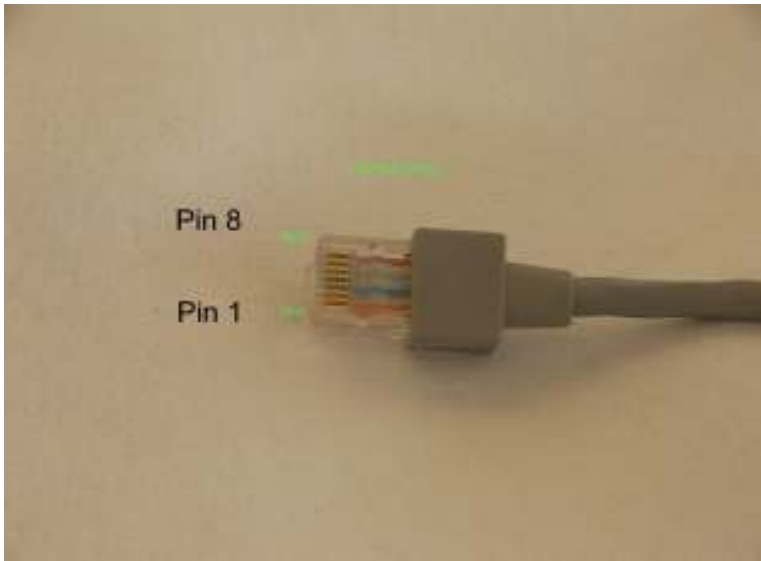
## EQ5 Mount Direct Control DIY Adapter This procedure is for the Experimenter

Although my SynScan GOTO unit has PC Direct mode, and the stability is good with the 3.25 firmware upgrade, I have had 1 or 2 occasions when I have “lost” accuracy. I decided to try the DIY EQDirect adapter. My first hurdle was to get the “pin out” for the SynScan EQ5 unit. A Google search came up with information and was verified with actual measurements.

The RJ45 female connector on the control unit itself has it's pin 1 starting on the right. Pin 1 is Gnd and Pin 8 is +12v. See below



I used a LAN cable and connector (RJ45). Obtained from a local PC retailer. Refer below





The overall size of the Vero board is approximately 55mm x 45mm. I picked up the 12 volt supply for the 7805 voltage regulator from pin 8 of the LAN cable. The completed unit is shown below with a serial to USB adapter connected.



### Advantages

What are the advantages of using the Direct Adapter. My findings.

1. In standby or park mode I find the current drawn with the Hand Controller installed is 290 mA. With the Adapter under the same conditions the current drawn is considerably reduced to 32 mA. This equates to longer battery life.
2. There is no need to page to the PC direct mode via the hand controller.
3. The possibility of losing accuracy or tracking due to some glitch in the hand controller firmware is removed.

### Testing

Make sure that the Max232 is removed from its socket. With a volt meter set to ohm reading check the board for shorts and that there is NO crossover of the 12 volt line.

**Check and check again that the tracks have been cut as indicated.**

Using a temporary 12 volt supply, apply 12 volts to the unit. Check that the 7805 regulator is giving 5 volts on pin 16 of the Max232 socket. If all is well proceed as follows.

Switch off the power and insert the Max232 IC. Switch on. You should measure voltages as follows:-

Pin 1	Pin 9
Pin 2	Pin 10
Pin 3	Pin 11 5V
Pin 4	Pin 12 5V
Pin 5	Pin 13 0V
Pin 6	Pin 14 9.5V to 10V
Pin 7	Pin 15
Pin 8	Pin 16 5 volts

These are the important voltages. The 10 volts is obtained via voltage doubling within the Max232. If all is well then move onto next step.

Remove the temporary 12 volt supply and plug the RJ45 plug into the GOTO controller on the mount. Connect 12 volts DC to the controller and switch on. Check that you have 12 volts available and that the 5 volt regulator is giving 5 volts. You may want to confirm the voltages as above. That it.

### **Using The DIY Adapter**

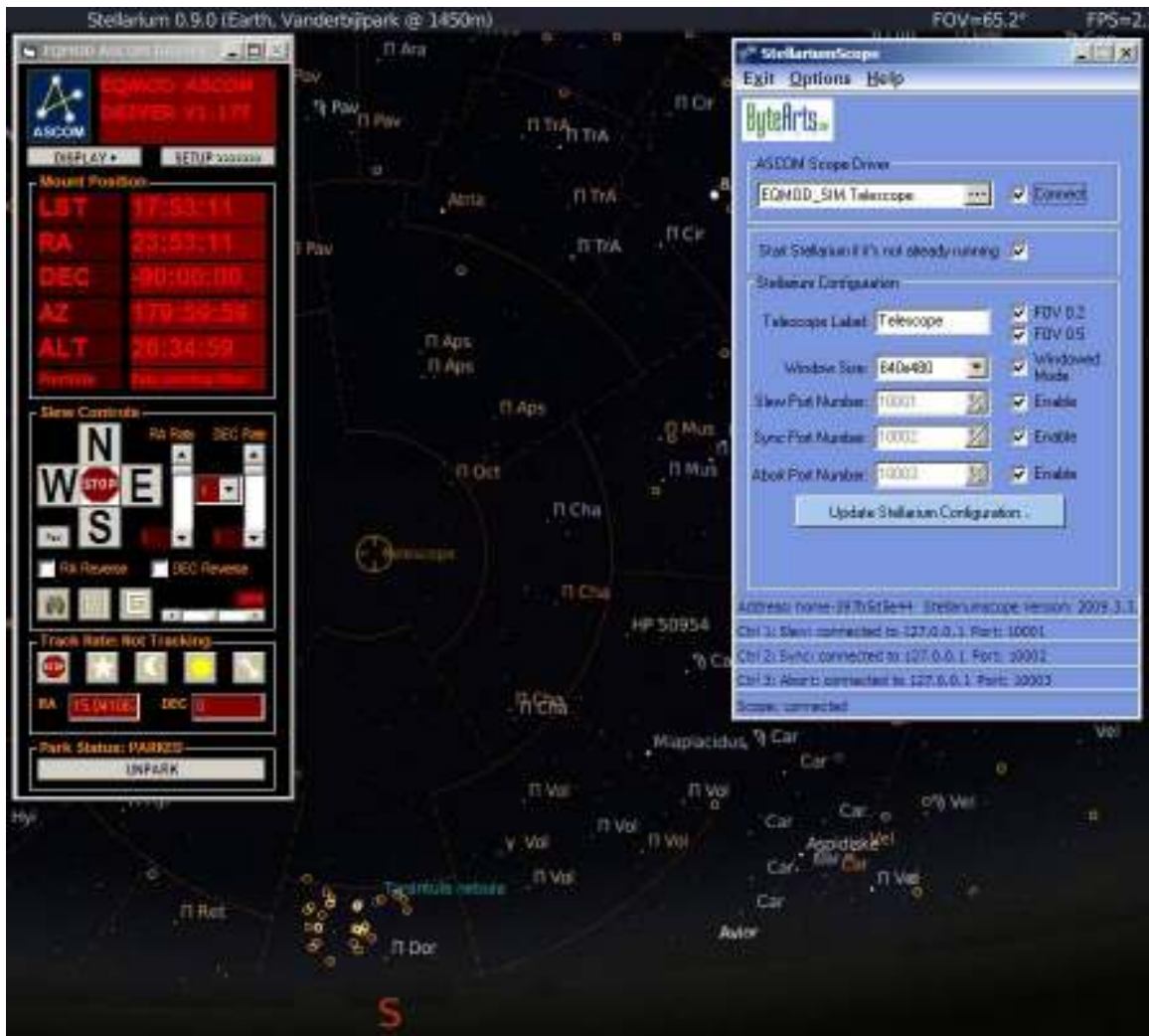
You must have the ASCOM Platform software installed. (<http://ascom-standards.org/>)  
Install the EQAscom Driver v1.17f (<http://sourceforge.net/projects/eq-mod/files/>)  
Install your Planetarium Software ie. Stellarium, Cart du Ciel, Hallo Northern Sky  
With Stellarium you MUST have **Stellarium Scope** installed as well.  
All the above are free on the net. Do a Google search.

Plug the RJ45 connector into the SynScan EQ5 control box. The same socket that your hand controller plugged into.  
Connect a 12 volt DC supply to the control box  
Connect your DIY adapter to you Laptop via a USB to serial adapter.

With Stellarium, I start it with Stellarium Scope. Select EQMod ASCOM EQ5/6, Click OK. Check "connect" The EQMOD ASCOM Driver V1.17f pops up. You are now ready to roam the skies. See insert next page. I used the Simulator as an example. The simulator is an ideal tool to get to know the ins and outs of the package.

My unit as above performs well when connected to my ThinkPad laptop via a USB to serial adapter. I run Stellarium 0.9.0 with Stellarium scope. ESCOM platform version 5 with the 117f driver. I have not had any glitches with it.

**A point worth noting. Later versions of Stellarium don't seem to work. Reason "Not Known"**



**Disclaimer :-**

**You use the information supplied in this document entirely at your own risk. The author takes no responsibility for any damages that may result .**

**10 August 2009**

Best wishes and Clear Skies  
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