



ZEQ25GT with Go2Nova[®] 8408 Hand Controller Firmware Upgrade

The firmware of a ZEQ25GT, including Go2Nova[®] 8408 hand controller, R.A. and DEC motor drive boards, can be upgraded by a customer. Please check iOptron's website, www.iOptron.com, under Support Directory, for the most up to date firmware.

To upgrade the firmware, you need some or all of the following software/hardware, depends on the upgrading you are performing:

- iOptron Upgrade Utility Program
- 8408 hand controller firmware
- R.A. motor drive firmware
- DEC motor drive firmware
- RJ9 serial port to RS232 cable
- USB to RS232 converter and driver. If your computer does not equip a RS232 port (9-pin D-shape connector) except the USB port, you need to buy a USB to RS232 converter, form a computer hardware store or on-line.

1. Prepare the hardware

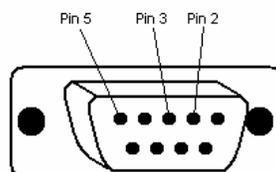
In order to perform the firmware upgrade, as well as to use planetarium software to control the mount via a 8408 hand controller, the communication between the PC and hand controller has to be established.

RJ9 to RS232 cable

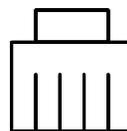
The firmware upgrade and computer controller is through a RJ9 serial port on a Go2Nova[®] 8408 hand controller. You need a cable to connect this port to the serial port of a computer. Here is a sample of a RJ9 to RS232 serial cable.



If you are making your own cable, here is the wiring instruction:



RS232 connector (female)



1 2 3 4

RJ9 plug

Wiring	
RS232	RJ9
2	4
3	3
5	1

USB to RS232 converter

If you are using a computer only has USB ports, like most laptops do, you need a USB to COM converter to convert one USB port to a COM (RS232) port. Here are two examples of USB2COM converters.



2. Find the serial port (COM port) number from your computer:

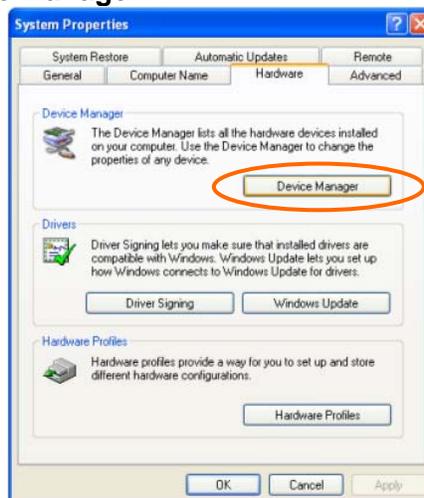
The first step is to find the COM port number. If your computer has a serial port (9-pin D-shape male connector on the back, next to the 25 pin printer connector), the default assigned number is COM1.

If you are using a USB to COM converter to convert one USB port to a COM port, you can find the computer assigned COM port number.

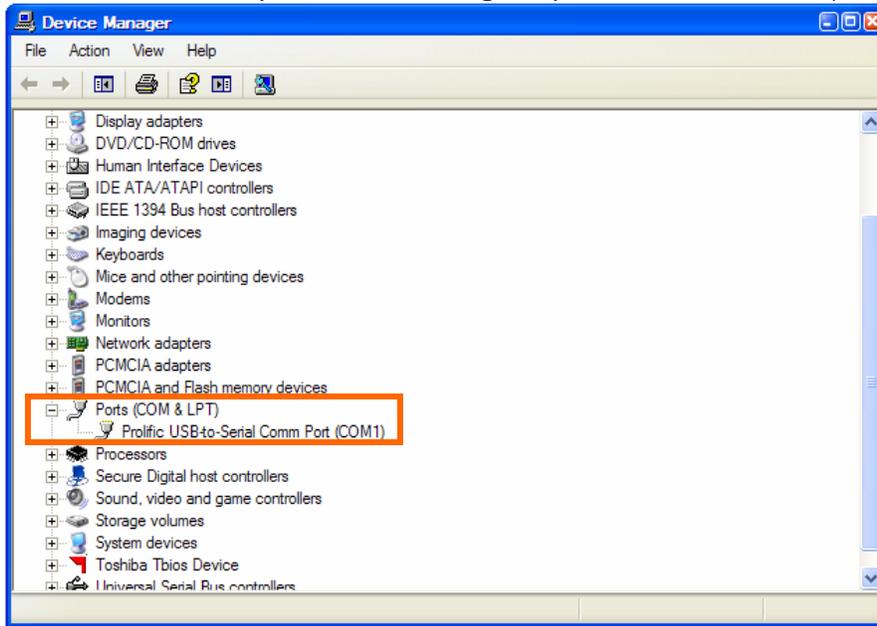
After install the USB2COM driver that comes with the device, click on **Start** located on the left bottom corner of your compute screen (Windows XP as an example). Move the mouse to **My Computer** and right click on it. Move the mouse down and click on **Properties**.



Click on **Hardware** and select **Device Manager**.



Double click on **Ports (COM & LPT)**, find out the COM number and write it down (in the following figure, the USB2COM converter uses a Prolific chipset and the assigned port number is COM1)



3. Download software and firmware from iOptron website:

Go to iOptron website, www.iOptron.com, click on **Download** tab. Locate **ZEQ Mounts** under **Software/Firmware Upgrades** catalog on the left part of the screen, and click on it.

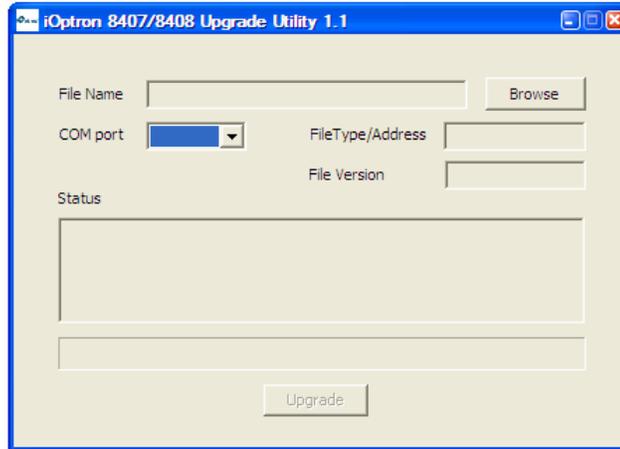
Download and save Upgrade Utility program, Go2Nova 8408 Hand Controller firmware, ZEQ25GT R.A. motor control firmware and ZEQ25GT DEC motor control firmware under ZEQ25GT firmware.

4. Upgrade 8408 hand controller firmware:

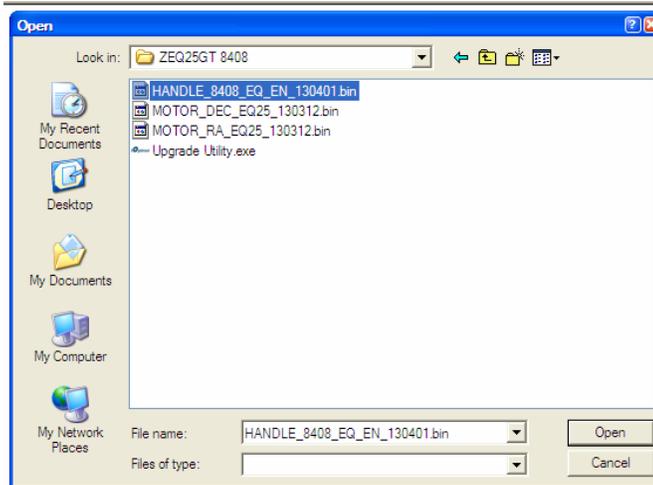
- (1) Connect 8408 hand controller to the HBX port of a ZEQ25GT mount. Make sure the mount power is OFF;
- (2) Connect RJ9 plug into the serial port of a 8408 hand controller and the 9-pin RS232 connector to your computer's RS232 port (or RS232 port of the USB2COM converter);
- (3) Locate download software and click on **Upgrade Utility.exe**:



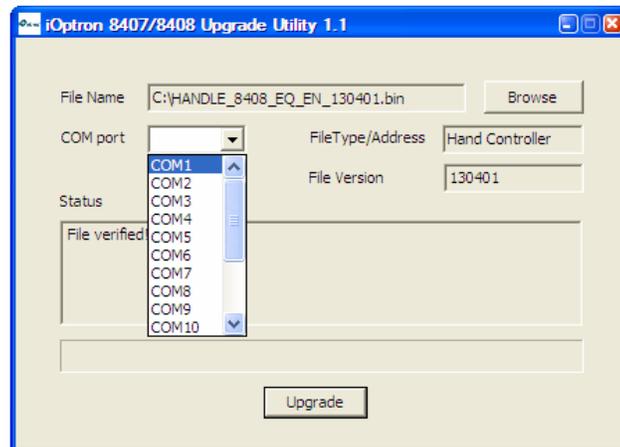
- (4) An iOptron Upgrade Utility window will display. Click on **Browse**:



(5) Select 8408 hand controller firmware HANDLE_8408_EQ_EN_YYMMDD and click **Open**

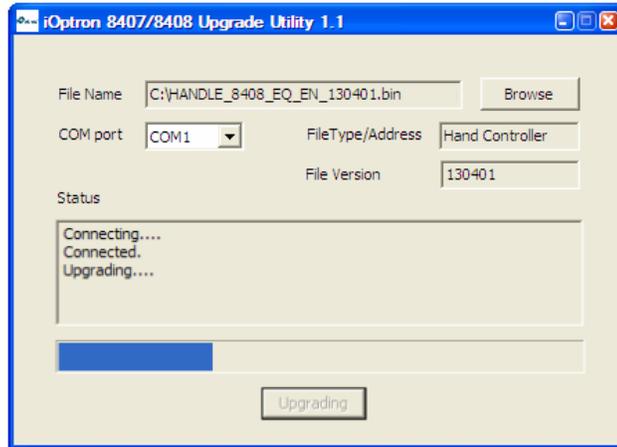


(6) The **FileType** and **Version** will be verified and displayed. Click on pull down menu of the COM port and select the COM port number. Here is **COM1**.

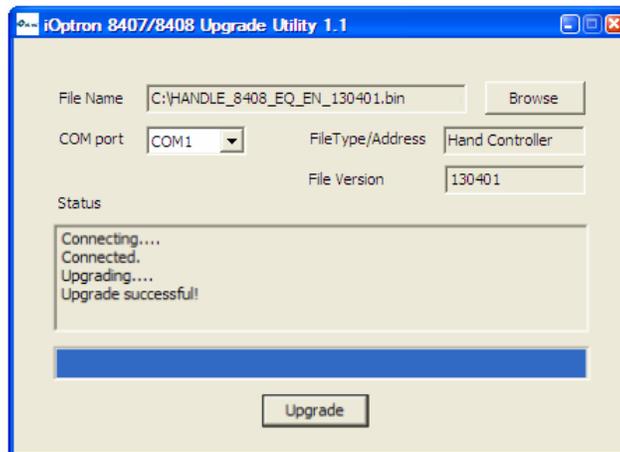


(7) Hold **ENTER** button of the hand controller while switch the ON/OFF button to turn the mount power on.

(8) Click on **Upgrade** button to start the process;



(9) After the firmware upgraded successfully, exit the Upgrade Utility program by click on .

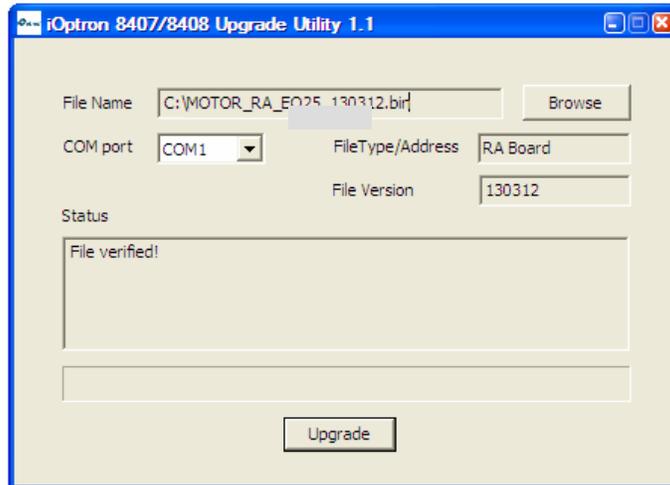


5. Upgrade ZEQ25GT R.A. or DEC motor control board firmware:

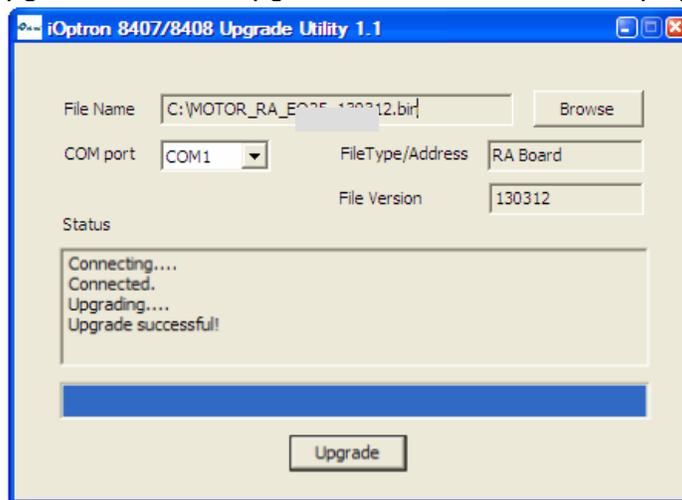
- (1) Connect 8408 hand controller to the HBX port of a ZEQ25GT mount. Make sure the mount power is OFF;
- (2) Connect RJ9 plug into the serial port of an 8408 hand controller and the 9-pin RS232 connector to your computer's RS232 port (or RS232 port of the USB2COM converter);
- (3) Switch the ON/OFF button to turn the mount power on.
- (4) Locate download software and click on **Upgrade Utility.exe**;



- (5) From your hand controller, press **MENU** button, select **Set Up Controller** → **Upgrade RA & DEC**, enter password (9999), then select **Upgrade R. A. Board** or **Upgrade DEC Board**;
- (6) Click on **Browse** in iOptron Upgrade Utility window. Select R.A. board firmware, MOTOR_RA_EQ25_YYMMDD and click **Open**;
- (7) Click on pull down menu of the COM port and select the COM port number. Here is **COM1**. Click on **Upgrade** button. The upgrading process will begin.



(8) After the firmware upgrade finished, "Upgrade successful!" will be displayed.



(9) Press **BACK** button of the 8408 hand controller, select **Upgrade DEC Board**. Follow steps (6) to (8) to finish DEC motor board firmware upgrade.

(10) Power cycling the hand controller and exit the Upgrade Utility program.

If the upgrade process was disrupted, wrong firmware is loaded, or the firmware does not upgrade successfully, just start over it again. Make sure a correct COM port is selected.