

iOptron Strain Wave Gear Mount Firmware Upgrade

The firmware of an iOptron Strain Wave gear (SWG) mount is customer upgradable. The upgrading process is only supported by Windows. Please check iOptron's website, www.iOptron.com, under **Support**, for the most up to date firmware.

Please note:

A SWG mount uses a Go2Nova 8409 V2 hand controller. It can't be exchanged with other 8409 hand controller by upgrade the firmware.

The firmware upgrade will be done via the USB2.0 port on an 8409 hand controller.

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 for the mount, currently V3
- Mount firmware upgrade package;
- PL2303 VCP (Virtual COM Port) driver if this is the first time connecting the mount to a computer.

Step 1. Download files

Go to a related mount page. Download PL2303 VCP driver, iOptron Upgrade Utility and mount firmware package. Save them on your computer desktop or a designated folder.

Step 2. Install PL2303 VCP driver

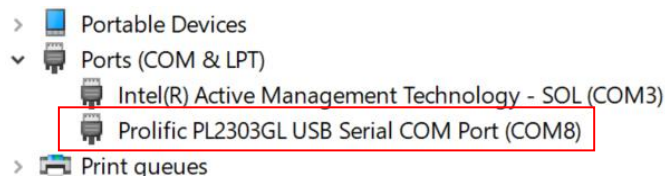
If this is the first time you connect the mount to a computer, please run PL2303 VCP installer. If you've done firmware upgrade before or run the mount via iOptron Commander, you may skip this step.

Step 3. Find the COM port number

Plug USB B plug of a USB cable into the USB port on a 8409 hand controller as shown below. Plug the USB A plug into any available USB port of the computer.







Click on Windows Device Manager to find the assigned COM port for the USB connection. Here the port # is COM8.

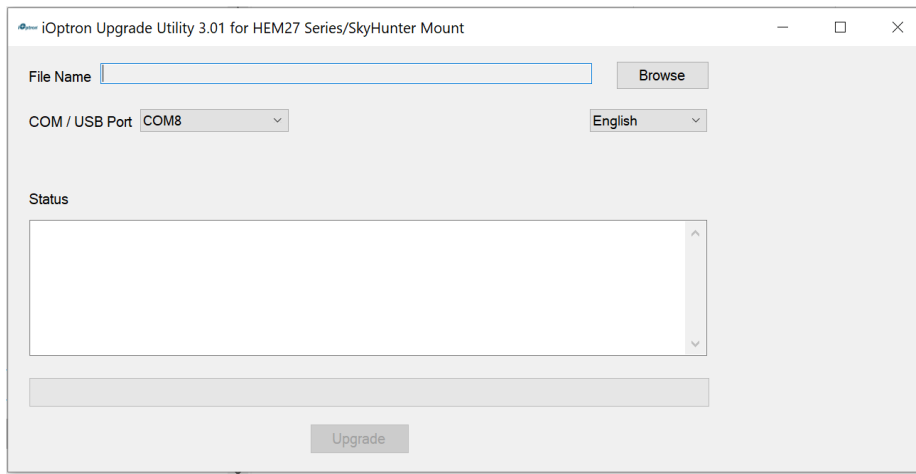


Step 4 Upgrade firmware

(1) Locate downloaded software and click on **iOptronUpgradeUtility_V3.exe**.

| Name | Date modified |
|--|-------------------|
|  HEM27_FirmwareUpgradeInstruction.pdf | 6/2/2022 10:15 PM |
|  HEM27_FirmwareVersionHistory.pdf | 6/2/2022 10:20 PM |
|  HEM27_FW220310.bin | 5/24/2022 8:03 AM |
|  iOptronUpgradeUtility_V301.exe | 6/22/2022 9:04 PM |

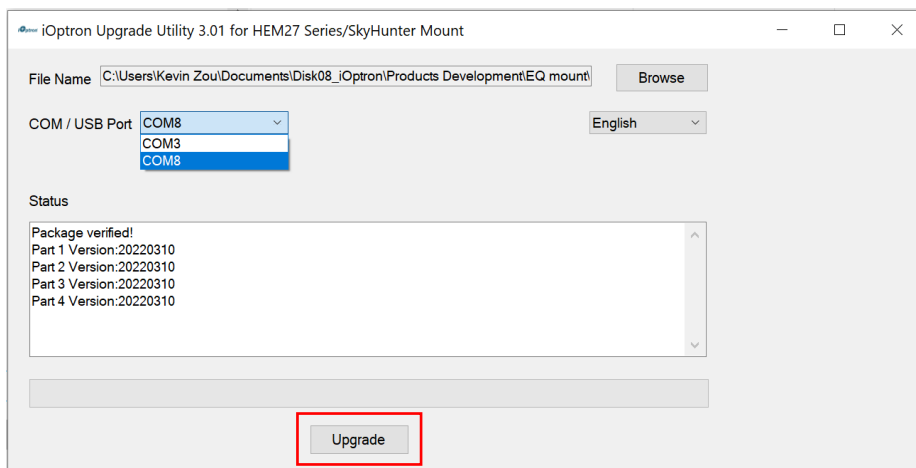
This will bring up the upgrade window:



(2) Click on **Browse** in iOptron Upgrade Utility window. Select the mount firmware package, such as HEM27_FW220310.bin, and click **Open**;

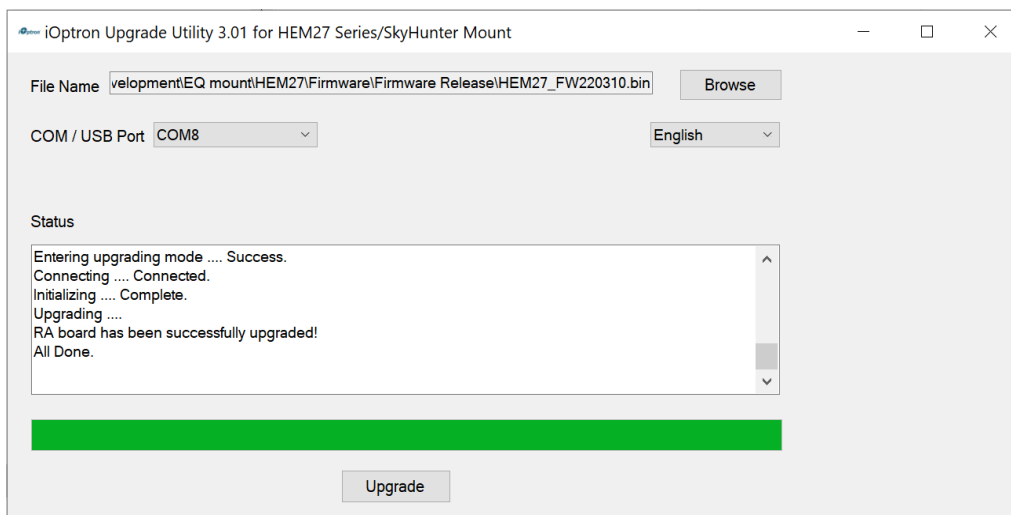
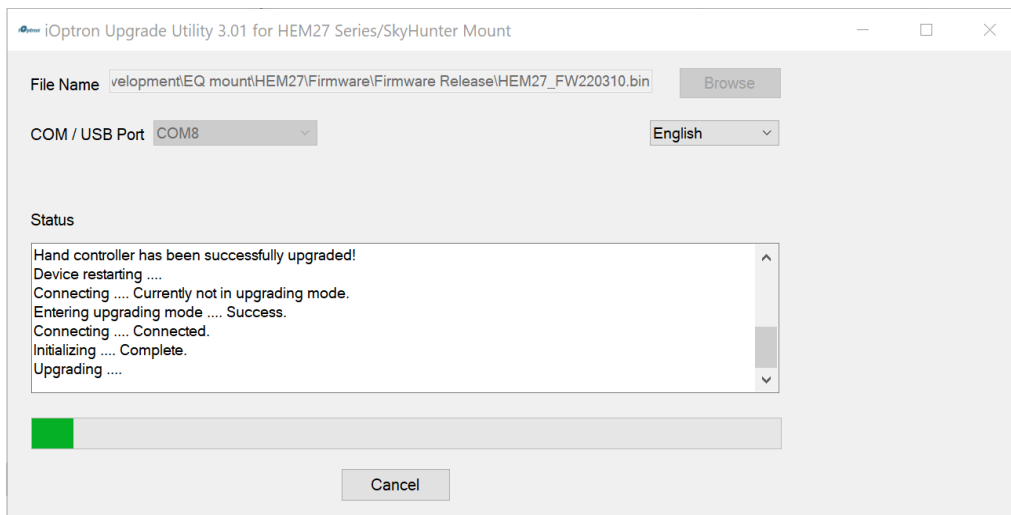
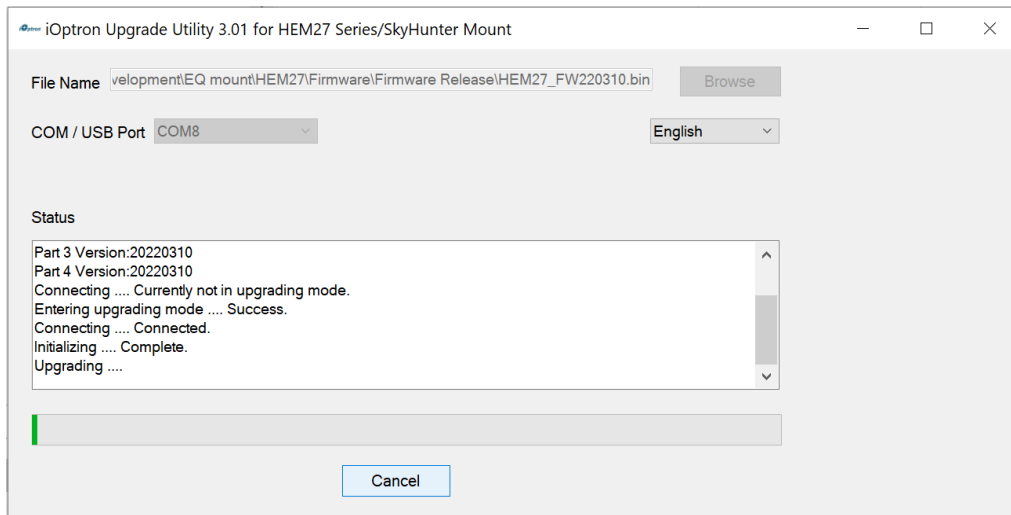
| Name | Date modified |
|--|-------------------|
|  HEM27 FW220310.bin | 5/24/2022 8:03 AM |

The **Package** and **Version** will be verified and displayed. Select the COM8 from **COM/USB Port** pull down menu.



(3) Click on **Upgrade** button to start firmware upgrade.

The Upgrade Utility will try to set the mount to upgrading mode and complete the firmware upgrade one by one.



- (4) Power cycling the mount. Check your firmware version after all four firmware upgrade is finished by press **MENU→Firmware Information**.
- (5) Exit the **Upgrade Utility** program.

Calibration high precision encoder:

An **EC** version mount has a high precision optical encoder system which needs be calibrated after the firmware upgrade to ensure precise tracking.

To calibrate the encoder:

- (1) Send the mount to Zero Position by using GOTO Zero Position.
- (2) Turn off the mount.
- (3) Press and hold number "2" button on the hand controller when power on the mount. The calibration process will start automatically.

The mount will swing to the eastern side quickly. Then will slowly move from eastern side to western side to calibrate the encoder. It will return to Zero Position after the calibration is finished. The total procedure may take a few minutes.

- (4) After the mount stopped, turn off the mount, and turn on again.

Common errors during firmware upgrade:

(1) COM port cannot be opened:

- Wrong COM port is selected;
- A mount is not connected;
- Cable is not plugged in firmly;
- PL2303 VCP driver is not installed
- **In some case, your hand controller may have a FTDI USB-RS232 chipset. In this case, please use FTDI VCP driver instead.**

(2) Connection failed:

- Mount power is not turned on;
- Cable is not plugged in firmly;
- Malfunctioned control board;
- Wrong firmware selected.

(3) Upgrade stopped in the middle or failed:

- Cable is not plugged in firmly;
- Cable is moved during process;

Contact support@ioptron.com for technical support.