

See the table below to determine which updates to apply. If the version is already greater than 4.07, the unit can be updated directly to v7.3.1.

Current Firmware	First Update	Second Update	Third Update	Fourth Update
2.02 or lower	2.03	2.04	4.07	7.3.1
2.03	2.04	4.07	7.3.1	None
2.04 – 4.05	4.07	7.3.1	None	None
4.07 or higher	7.3.1	None	None	None

The GSG StudioView is used to perform a firmware update. This is an interface that allows a connection to the unit and uploads firmware and scenario files. The latest version of the StudioView software can be obtained from the Pendulum website at:

<https://pendulum-instruments.com/products/gnss-simulators/gsg-studioview-software/>

For the instrument to communicate with the PC Software the NI VISA runtime is required. NI VISA runtime can be downloaded directly from the National Instruments website:

<http://joule.ni.com/nidu/cds/view/p/id/3342/lang/en>

To obtain the firmware updates 2.03, 2.04, and 4.07 please contact Pendulum Support:

service@pendulum-instruments.com

Once the VISA Runtime and the GSG StudioView are installed, and the firmware updates are downloaded, open GSG StudioView. Close the Application tips screen (if necessary) and from the Toolbar select Uploader. See Figure 2.



Figure 2. GSG StudioView MainToolbar

Note: The Uploader icon is  or  in previous versions of StudioView.

On the Uploader screen press the connections icon  to open the connections window. On the connections window, all connections for GPIB and USB are shown in the list. To refresh the list and search for more GPIB or USB devices, press the refresh  button to scan for devices. To add an Ethernet device, press the add new device button  and enter the name and IP address. See Figure 3.

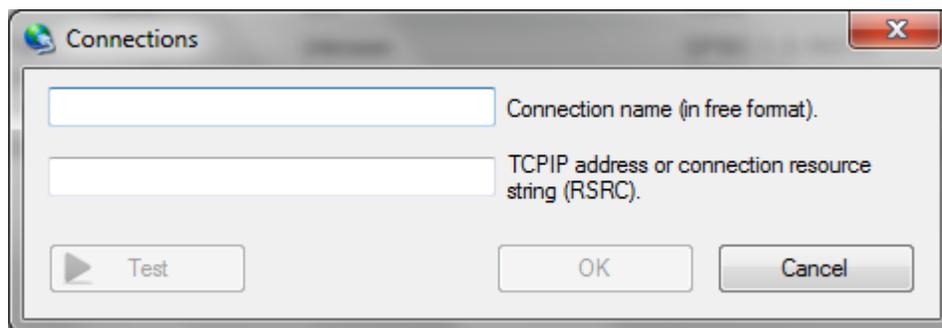


Figure 3. Adding a device connected via Ethernet

To see the IP or change the interface method, select Interface and reference from the Options menu. See Figure 4. *Note: This screen varies based on current firmware version.*

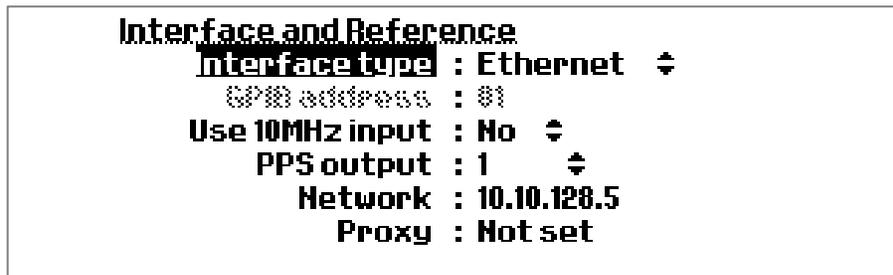
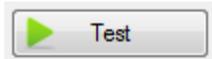


Figure 4. Interface selection screen.

To ensure proper connection of the Ethernet connected unit, press the Test button  on the Add a device screen. The response should look like Figure 5 with the appropriate serial number and equipment information.

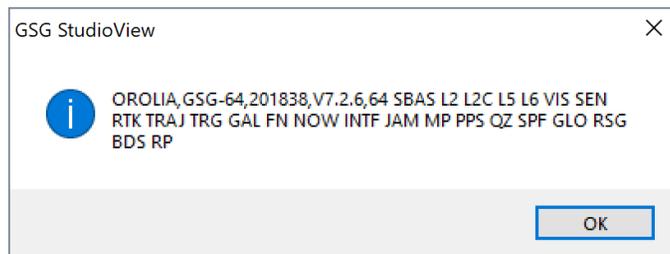


Figure 5. IDN Query Reply

To update the firmware, press the Open button (next to select file for uploading), and navigate to the downloaded file on the PC. Press the Start button to begin the update. The unit will first transfer the file (Figure 6), and then update the firmware (Figure 7).

NOTE: Version 4.3.0.4 of StudioView software sends a final query after upload that older firmware cannot respond to. This will result in StudioView displaying an error that the firmware update failed ('Failed: Device has not replied in time: *WAI, ErrCode: 0xBFFF0015'). If the unit screen looks like Figure 7 (firmware is updating) then the file did successfully transfer.



Figure 6. GSG Receiving Firmware Update



Figure 7. GSG Updating Firmware

When it is complete the front panel of the GSG will ask you to restart the unit or will reboot itself. (*Firmware version dependent*). See Figure 8.



Figure 8. GSG Update Complete

After the unit reboots, you can verify that the new firmware version is 2.03, 2.04, 4.07, or 7.3.1 from the Options menu by selecting Show system information. See Figure 1.

It is important to know that after a firmware update to v2.03, v2.04, or 4.07 the GSG’s interface is reset to USB. If you were using a different interface you will need to go back to Interface and reference in the Options menu and reconfigure the settings. See Figure 9.

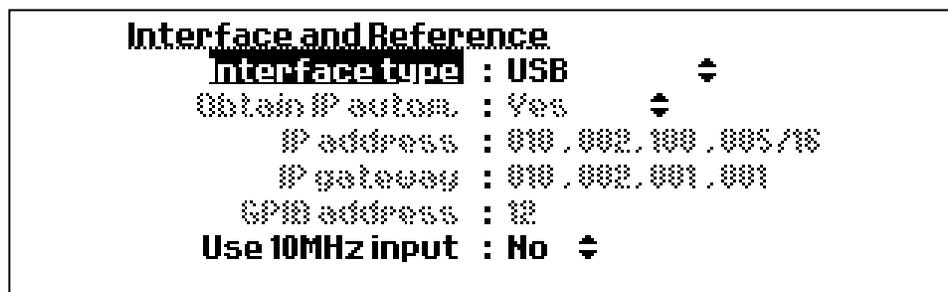


Figure 9. Interface may be reset to USB after an update.

This only happens after a firmware update, or you choose to restore factory defaults. Do this first for v2.03, v2.04, v4.07, and then v7.3.1 as necessary.

After the final update, it is necessary to perform a ‘Reset to Factory Defaults’ and then reboot the unit. In the Options menu, select Reset to Factory Defaults.

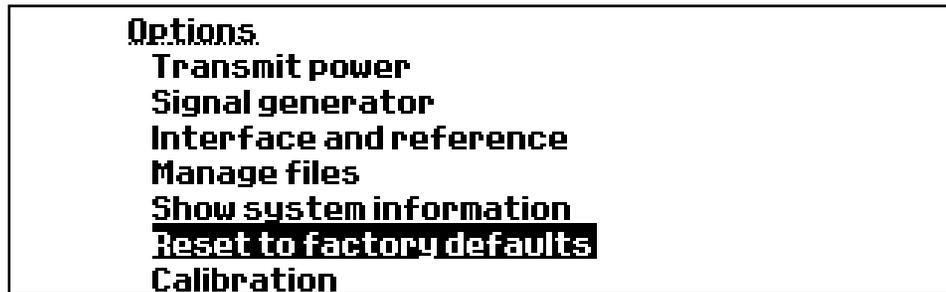


Figure 10. Options menu

This option restores the unit to the factory default configuration.

- “Clean&Restore” will restore the original pre-defined scenario/trajectory/event/navigation data files and **delete all user created/uploaded files**.
- “Restore” will only restore data files to their defaults – all user data on the unit will remain (unless they have same file names as the factory data, which is not recommended).
- “Cancel” will do nothing and return to the “Options” menu.

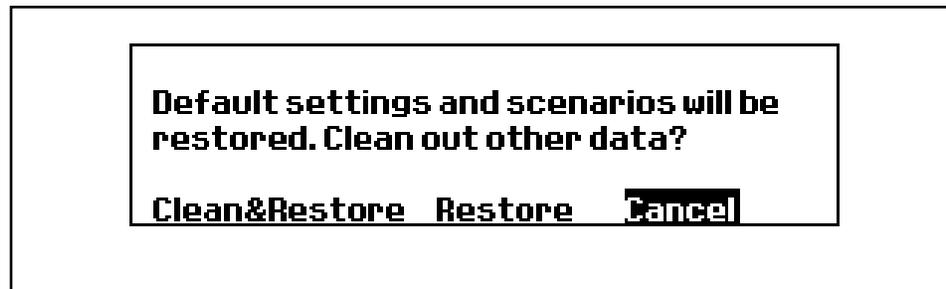


Figure 11. Reset to Factory defaults

The unit will automatically reboot after “enter” is pressed when factory defaults are restored.

The latest GSG manual can be found online at:

https://pendulum-instruments.com/files/manuals/cdmanual/operating_manuals/GSG-Series-um.pdf