doric

Firmware upgrade-downgrade Procedure for *Doric Neuroscience Studio* v5 and v6

Application Note

Version 1.1.0

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Comparison of DNS version 5 and version 6

Since July 2022, *Doric Lenses* has released version 6 of *Doric Neuroscience Studio* (DNS). In addition to fixing bugs, this new version has improved the user interface, added new features, and is compatible with the latest products. A detailed comparison can be found in Fig. 4.1 in the specification chapter.

1.1 Key differences between versions

However, there are key differences (see Table 1.1) which could influence the decision to upgrade to version 6:

- Saved channel configurations from version 5 are **no longer compatible** with version 6.
- Data is exclusively saved in HDF5 files *.doric* extension format (*.csv* and *.tiff* format from version 5 are no longer available). HDF5 files can be read with Matlab, Octave, and Python. Code examples are provided to facilitate data analysis with those external applications, HERE.

Table 1.1: *Comparison Summary between Doric Neuroscience Studio v5 and v6*

	DNS v5	**DNS v6**
Data file format	.csv, .tiff or .doric [1]	.doric [1]
Requires firmware update for older products		x
Requires firmware downgrade for new products	x	
Compatible v5 Configuration file	x	
Fixed v5 Bugs		x
New Features		x
Continuously supported by Doric Lenses		x

1.2 Advantages of using .doric over other file formats

- Stores heterogeneous data types (such as signal vectors, images, and videos) in a single file;
- Saves configuration parameters used to record the data;
- No maximum length, which is ideal for time-series recordings lasting more than a day and/or recordings with behavioral videos;
- Seamlessly integrate behaviour data with *in vivo* neural recordings;
- Compatible with Doric's new data analysis software, *DANSE*;
- Easily read *.doric* to Matlab, Python or Octave using provided codes[1] ;

[1] Matlab, Python, R, and Octave codes are provided HERE to read *.doric* file format for data analysis.

Should you upgrade to version 6 or downgrade to version 5?

1. If you have a data analysis pipeline that requires a .csv file and a large number of configuration files that would be time-consuming to recreate → *Downgrade to version 5 in section 3*.
2. Else → *Upgrade to version 6 in section 2*.

2

Upgrading to DNS version 6

2.1 Installing the software from scratch

This section details instructions on how to install and set up *Doric Neuroscience Studio* (DNS) version 6 from scratch. However, if a previous version of DNS is already installed on the computer, see section 2.3 for instructions on upgrading to the newest version. If you do not know which version is currently installed, see section 2.2 for instructions on how to find the version number of the software.

REMINDER:
Version 5 Configuration Files **are NOT compatible** with version 6.
Please **document the parameters** used in version 5 **BEFORE upgrading** to version 6.

We recommend installing both:

- *Doric Neuroscience Studio* - Data acquisition software. (Section 2.1.1)
- *Doric Maintenance Tool* - Update tool for software and device firmware. (Section 2.1.2)

2.1.1 Installing *Doric Neuroscience Studio*

1. **Run** the Doric Neuroscience Studio Installer from the supplied USB key or download the latest version of the software from our Doric Neuroscience Studio webpage. See Table 4.1 and 4.2 for computer requirements.
2. **Select** the language to use during the installation.

Note: If a previous version of **Doric Neuroscience Studio** is already installed, the software will ask you to uninstall the previous version before installing the new one (see section 2.3).

3. Click **Next** in the Information window.
4. **Choose** where to install the software (Fig. 2.1) and click **Next**.

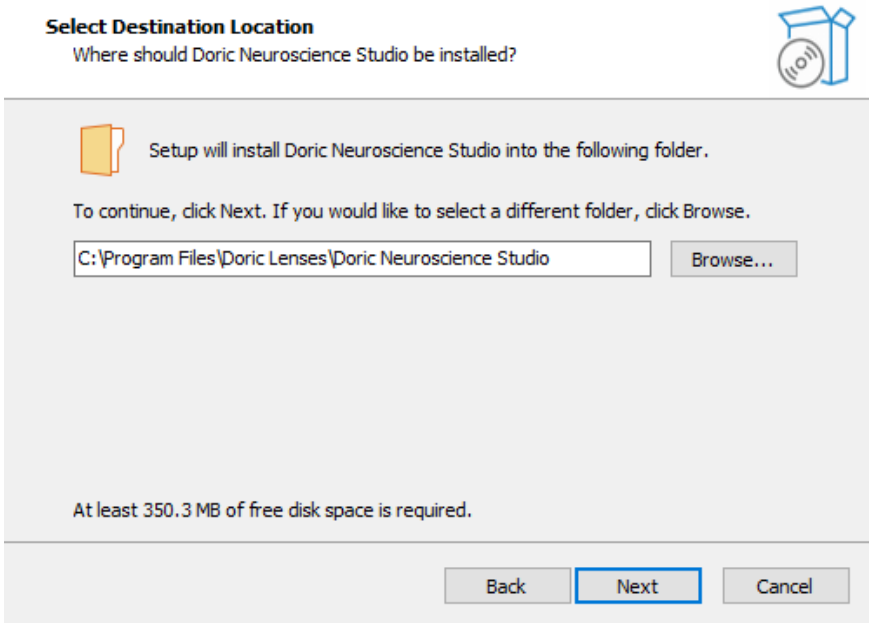


Figure 2.1: *Select Destination Location*

5. **Choose** if desired to create a shortcut in the Start Menu folder and click **Next**.
6. Several Options are possible:
   - **Select** *Create a desktop shortcut* if you want a shortcut to launch the software on your desktop (Fig. 2.2).
   - **Select** *Doric Maintenance Tool* to install the software required to update the firmware of devices (Fig. 2.2).
   - **Select** *Device Driver for 33U, 37U, and 38U series cameras* to install the drivers for USB cameras. This is necessary mainly for *Behavior cameras* and *BFPD systems* (Fig. 2.2).
   - **Select** Device Driver for all GigE cameras to install the drivers for Ethernet cameras (Fig. 2.2).

   Click *Next* once the selection is done.

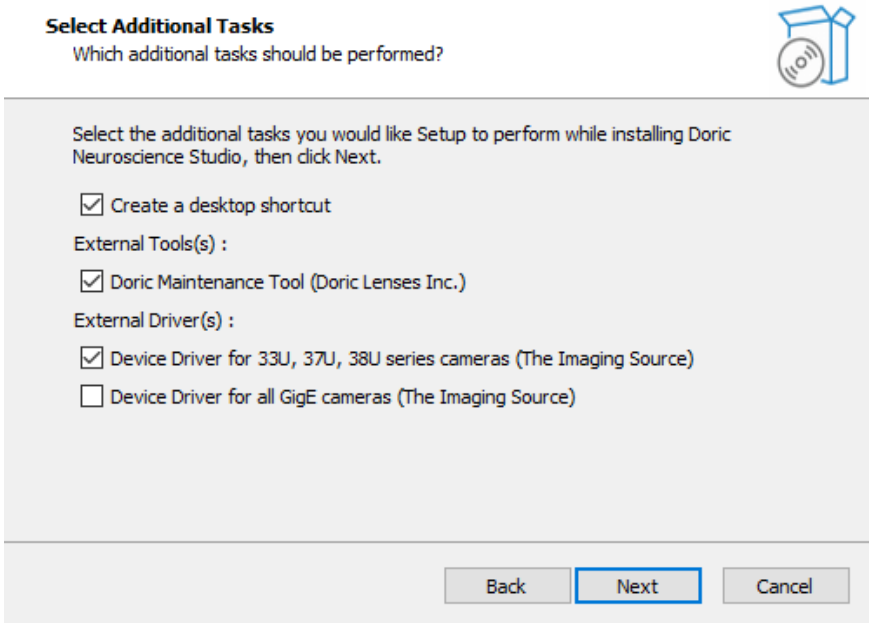


Figure 2.2: *Select complementary installations*

7. When ready, **click** *Install* to begin the process. This should take a few moments.
   Note: If you have selected the installation of *Doric Maintenance Tool* and/or the installation of another driver, their installation will start the first installation and will be covered in the next sections.
   When the installation is done, the message in figure 2.3 will pop up.

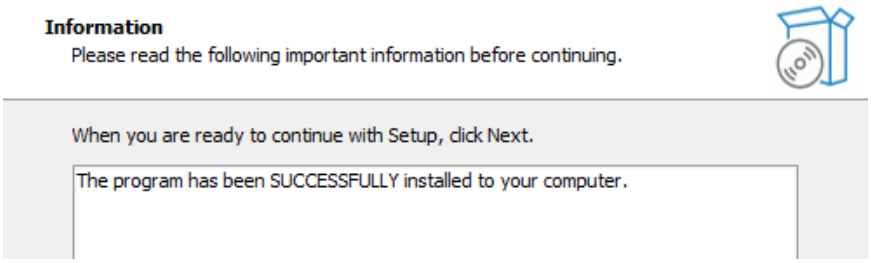


Figure 2.3: *Successful Installation of the Doric Neuroscience Studio*

8. Click **Finish** to exit the setup. The software is ready for use.

2.1.2 Installing *Doric Maintenance Tool*

If *Doric Maintenance Tool* was checked marked during the DNS setup (as in Fig. 2.2), the *Doric Maintenance Tool* installation should begin automatically once the *Doric Neuroscience Studio* setup is done. Skip to step 1, below for further installation instructions.

If you need to install *Doric Maintenance Tools* manually, you can find a link to download it HERE. Select the icon in the *Download* column (Fig. 2.4) and a .exe file should pop up at the bottom, left of the window (Fig. 2.5). Double-click on the .exe file to launch the setup of the software (Fig. 2.5).

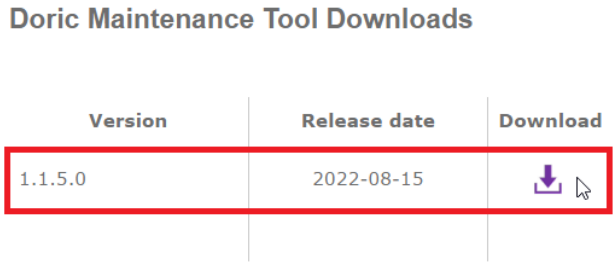


Figure 2.4: *Download Doric Maintenace Tools from the Doric Lenses website*

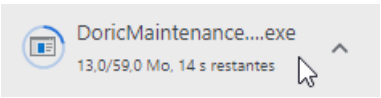


Figure 2.5: *Click on the .exe file to launch the Doric Maintenance Tool Setup*

1. **Select** the language to use during the installation.

Note: If a previous version of **Doric Maintenance Tool** is already installed, the software will ask to uninstall the previous version before installing the new one (see section 2.3).

2. Click **Next** in the Information window.
3. **Choose** where to install the software (Fig. 2.6) and click **Next**.

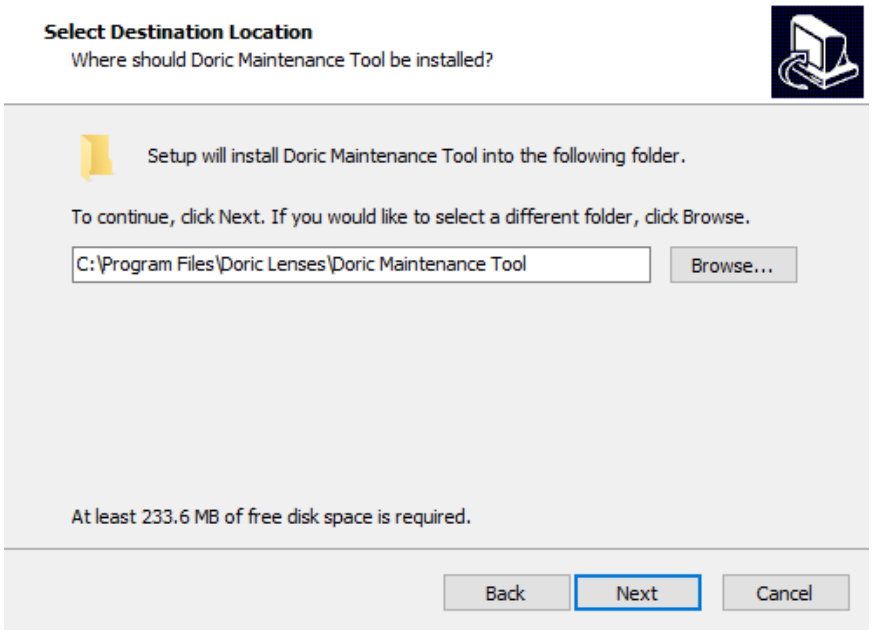


Figure 2.6: *Select Destination Location*

4. **Choose** if desired to create a shortcut in the Start Menu folder and click **Next**.
5. **Unselect Create a desktop shortcut** if you do not want a desktop shortcut for **Doric Maintenance Tool** on your desktop and click **Next**.
6. When ready, click **Install** to begin the process. This should take a few moments.
   When the installation is done, the message in figure 2.7 will show up.

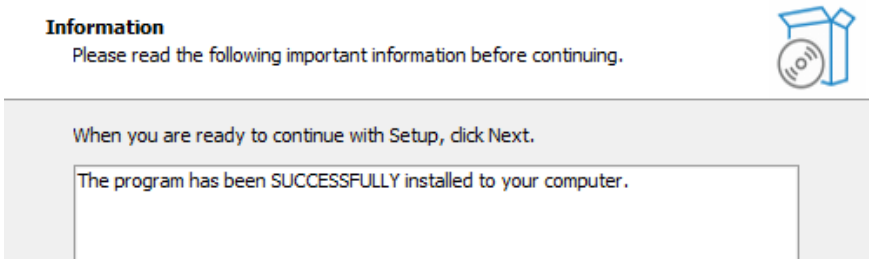


Figure 2.7: *Successful Installation of the Doric Maintenance Tools*

7. Click **Finish** to exit the setup.

2.1.3 USB Camera Driver

The installation of the Camera Driver is simpler than the other installations. It will automatically start if the **Device Driver for 33U, 37U, and 38U series cameras** is checked during the installation of *Doric Neuroscience Studio* (Fig. 2.2).

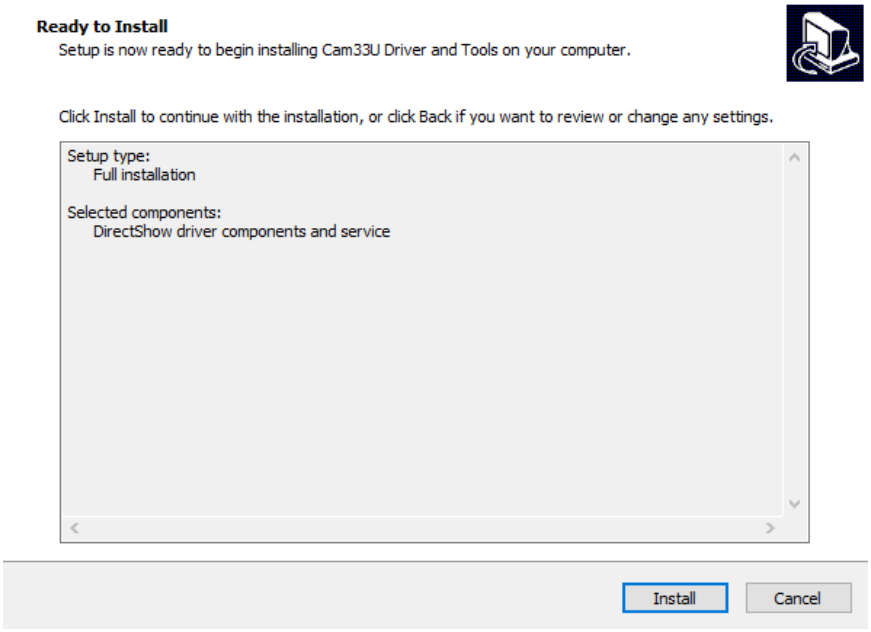


Figure 2.8: *Successful Installation of the Doric Neuroscience Studio*

1. Click **Install** to begin the process (Fig. 2.8). This should take a few moments.
   When the installation is done, the message in figure 2.9 will show up.

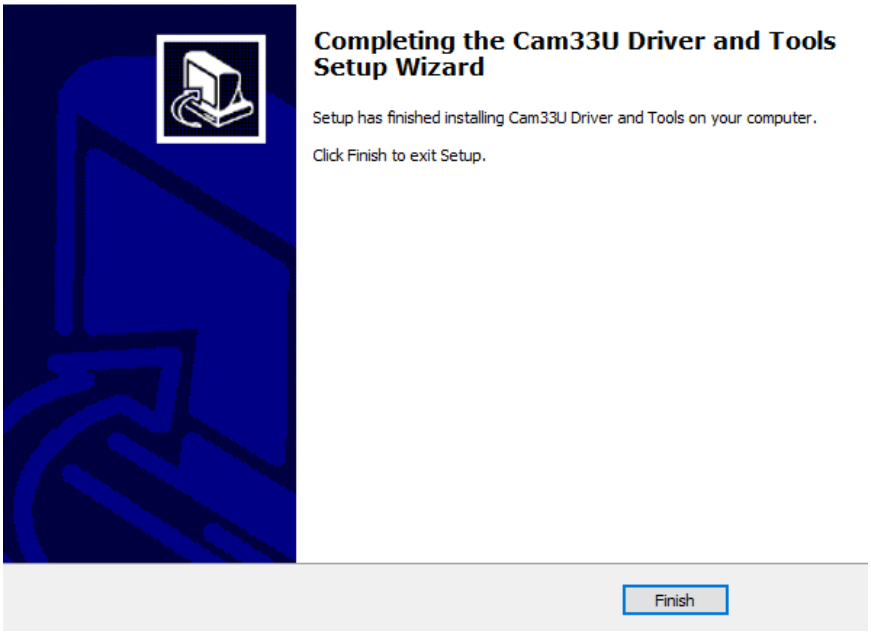


Figure 2.9: *Successful Installation of the Doric Neuroscience Studio*

2. Click **Finish** to exit the setup.

2.1.4 Ethernet Camera Driver

This installation is necessary if you plan to use GigE Ethernet camera for the experiments. The installation will automatically start if the **Device Driver for all GigE cameras** is checked during the installation of *Doric Neuroscience Studio* (Fig. 2.2).

1. Click **Next** in the Welcome window
2. In Select Components windows, it is possible to select different options Fig. 2.10):
   - Full installation: all the components will be install.
   - Compact installation: to only install the driver.
   - Custom installation: to select what will be install during the process.

   Note: In the same time as the driver it is possible to install 2 options:

   - Kernel-Mode filter driver to enhances the performance. It is recommended to use it if possible.
   - IP configuration API files consists of two DLLs:$ipconfig\_api\_x64.dll$ and $ipconfig\_api\_win32.dll$.These DLLs can be imported into a C# program. Using the API, a program can query camera name, serial number, IP adress, firmware version and so on (for more information about this module, see here).

   When components had been selected, click on **Next** to start the installation.
3. When the installation is done, the message in figure 2.11 will show up.
4. Click **Finish** to exit the setup.

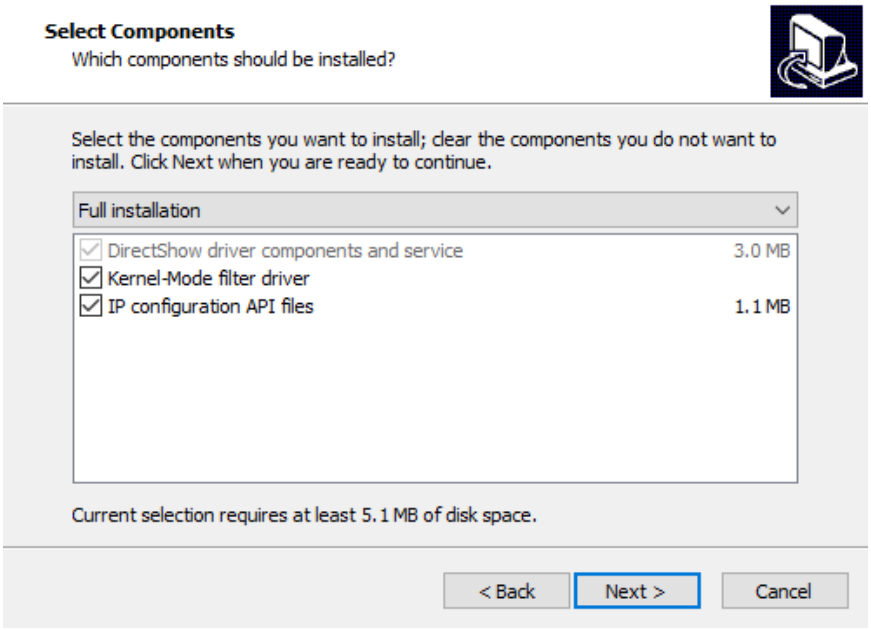


Figure 2.10: *Options selection in Ethernet Camera driver installation*

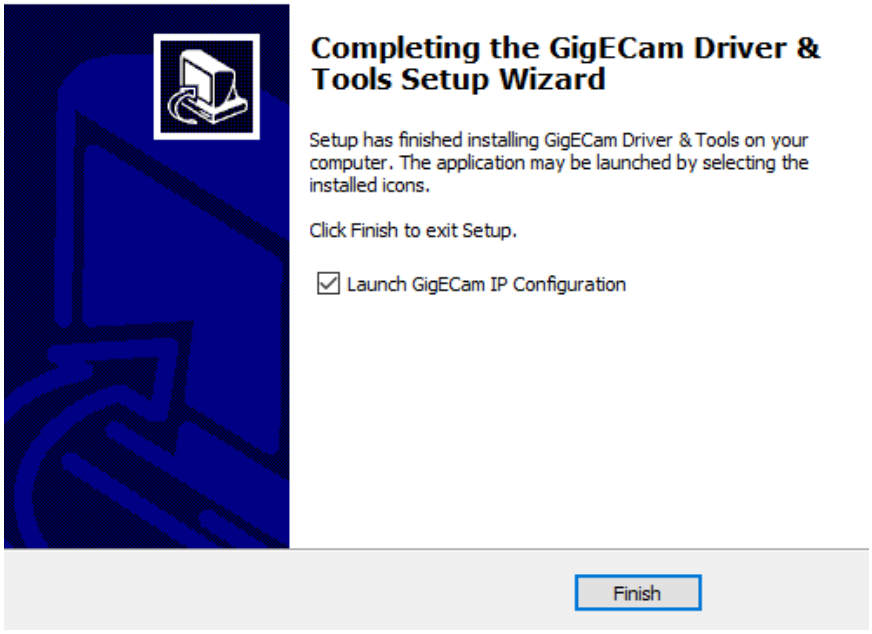
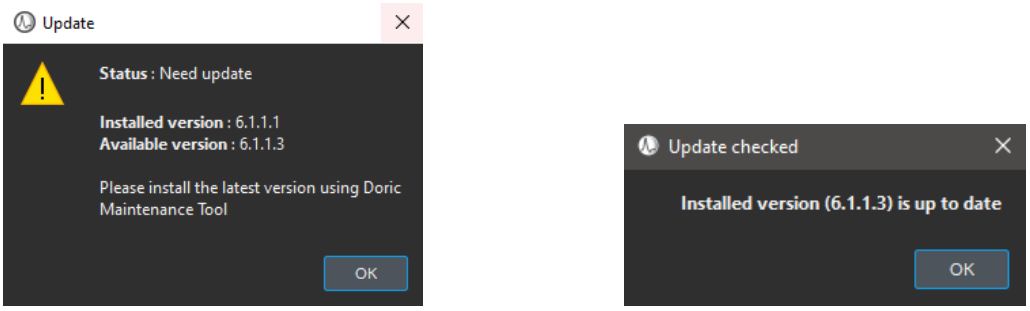


Figure 2.11: *Successful Installation of the Ethernet Camera Driver*

2.2 Checking DNS version number

1. Make sure to keep the software regularly updated. By selecting **Help | Check for updates**, the **Update** window will appear (see Fig. 2.12).



(a) *Update Window: Need update* (b) *Update Window: Up to date*

Figure 2.12: *Update Window*

2. Should the installed version be older than the online one, the **Update** window will appear in Fig. (2.12a) asking to install the newest version with **Doric Maintenance Tool**. The procedure is described below, otherwise, the **Update checked** window will appear if the version is up to date.

2.3 Software Upgrade

If you do not have *Doric Maintenance Tool*, see section 2.1.2.

1. **Disconnect** all Doric devices from the computer before starting the update and **close** *Doric Neuroscience Studio*.
2. **Open** *Doric Maintenance Tool* and **Select** the tab *Software(s)*.

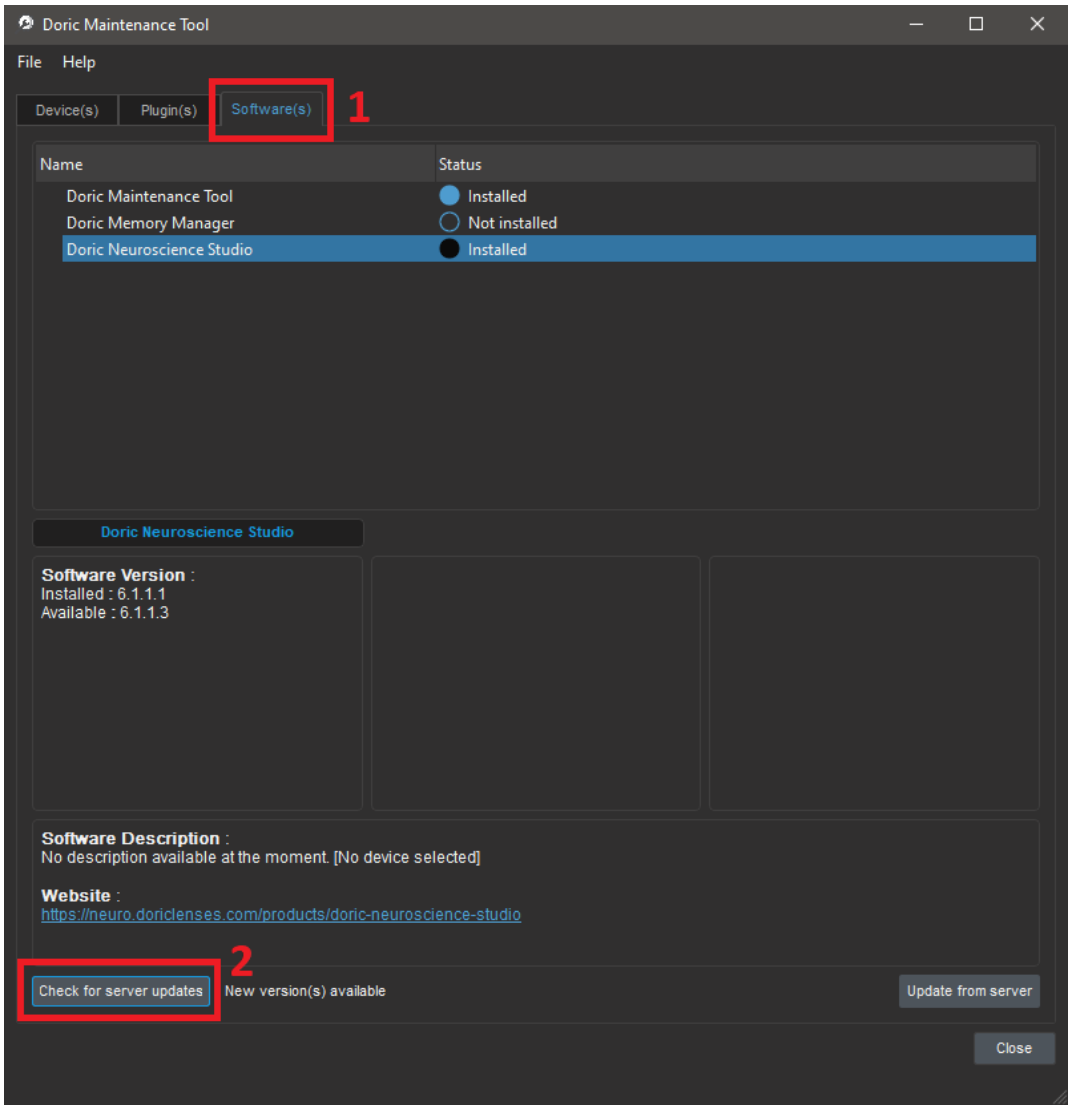


Figure 2.13: *Doric Maintenance Tool - Overview*

3. **Select** *Doric Neuroscience Studio* and **click** on *Check for server updates* (Fig 2.13).
4. The version displayed next to *Available* will be updated to the latest version available.
5. **Click** on *Update from server* to start the update of the version. After a short download time, *Doric Maintenance Tool* will turn off and the installation window will be displayed.
6. **Select** the language to use during the installation.
7. The installer will immediately detect the previous version and present the option of uninstalling it (Fig. 2.14). **Click Yes**.

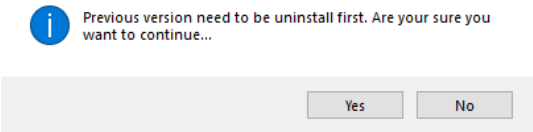


Figure 2.14: *Uninstall Window*

8. When the program asks if you are certain, **Click Yes**.
9. When the previous version is uninstalled (Fig. 2.14), the installation of the new version needs to be done like the first installation (see section 3.1.2).

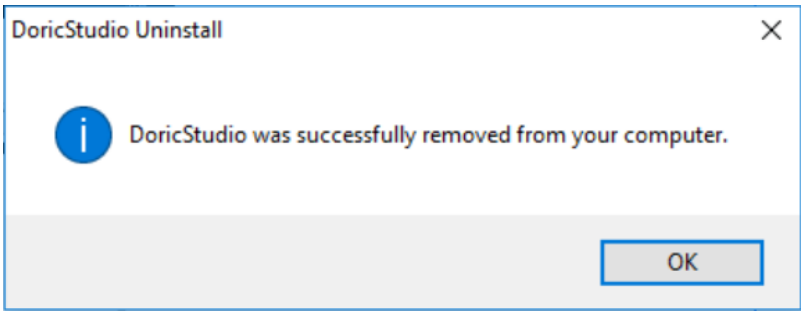


Figure 2.15: *Uninstall Completion*

10. Once the installation is finished, the update is complete.

Note: Always update **Doric Maintenance Tool** at the same time as **Doric Neuroscience Studio**.

2.4 Firmware Upgrade

2.4.1 Video tutorials link

Videos tutorials are available HERE, to facilitate the update and to solve common issues. Videos include:

- Light Source update
- Light Source - issue with motherboard bootloader
- Light Source - issue with channels not visible
- Fiber Photometry Console Update

2.4.2 Installation Procedure

To update the firmware version, **close** *Doric Neuroscience Studio*.

1. **Open** *Doric Maintenance Tool*. (The software can be installed at the same time as *Doric Neuroscience Studio*)
2. **Turn On** the device.

Note: Always upgrade the firmware of **ONE device** at a time. All other devices should be **turned OFF** to avoid possible conflict when erasing device programming.

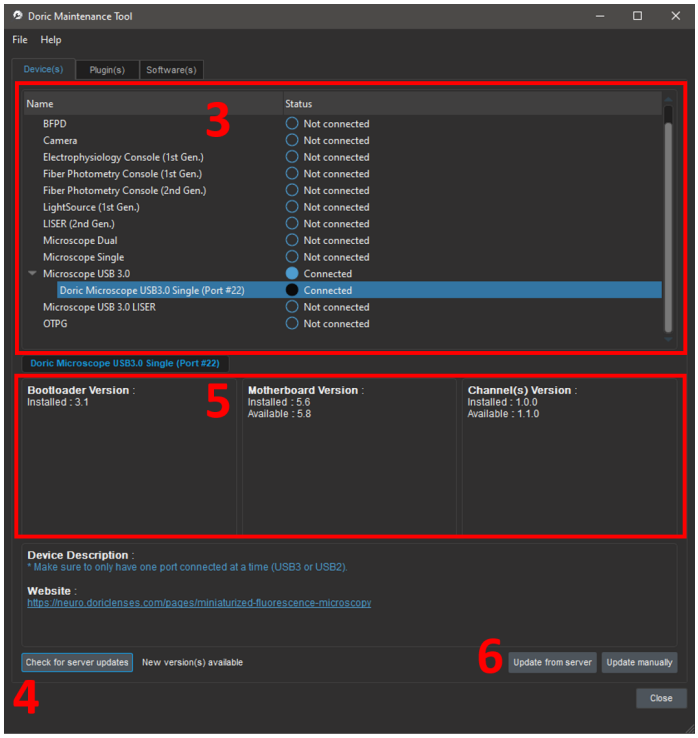


Figure 2.16: *Doric Maintenance Tool home page*

3. In the list under *Name*, **select** the device to update (its status needs to be *Connected*) (Fig. 2.16).
4. **Select** *Check for server updates*. *Doric Maintenance Tool* will connect to the server and verify if an update is available (Fig. 2.16).
5. Under *Motherboard Version* and *Channel(s) Version*, the present versions and the available versions are displayed (Fig. 2.16).
6. **Select** *Update from the server* to launch the update. (Sometimes, an update may be necessary without using the server version. In this case, a representative of Doric Lenses will send you an updated file and you must use *Update manually* instead of *Update from server*) (Fig. 2.16). For *LED Drivers*, no selection is necessary, as running the update will do both the motherboard and the channel(s) automatically.

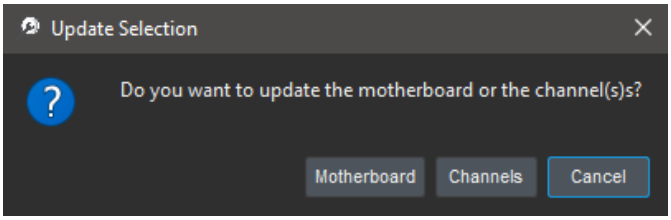


Figure 2.17: *Doric Maintenance Tool Update Selection*

7. **Choose** between updating the *Motherboard* or the *Channels* (if you need to update both, **select** *Channels* first, then repeat the process for the *Motherboard* once the first update is successful) (Fig. 2.17).
    - Note that some devices (such as consoles) require changing the USB connection on the device to the service USB port when updating the Channels (Fig. 2.18). In such cases, the name of the device connected to the computer will change to *Channels* (FPGA (Port #) (Fig. 2.19). Running the firmware update on the changed name will work perfectly and once the USB is reconnected to its normal port, the real name will come back.

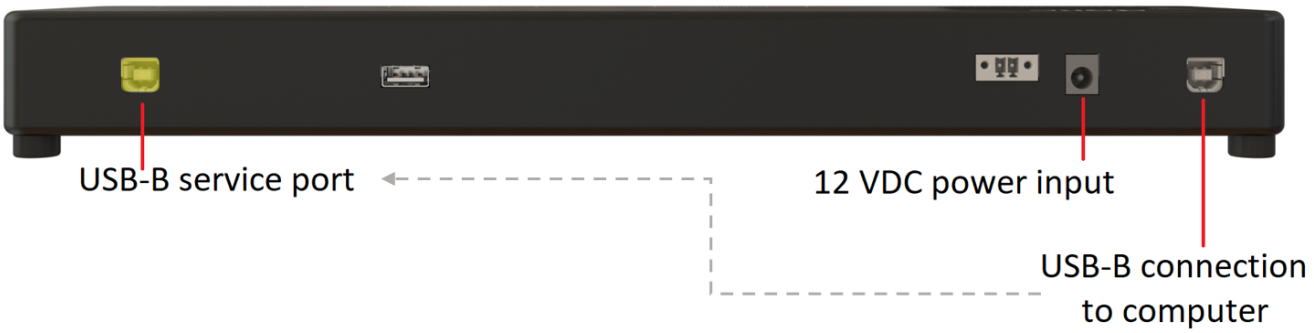


Figure 2.18: *Change the location of the USB connection to the service port*

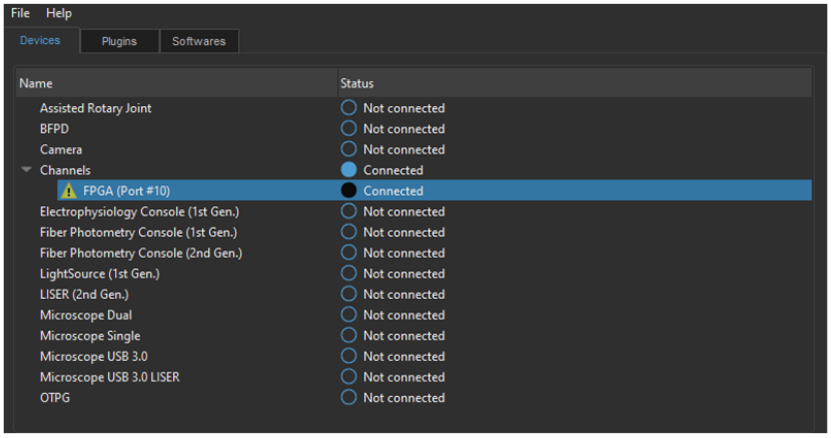


Figure 2.19: *Doric Maintenance Tool Channel-Port device name change*

8. **Wait** the end of the installation and **select** *OK*.

WARNING:
Do **NOT** turn **OFF** the device while an **update is in progress**.

9. **Wait** 10 seconds and **turn OFF** the device. **Turn ON** the device and start *Doric Neuroscience Studio*.

2.4.3 Specifics of USB-3 driven devices

This section is specific to devices connected through a USB-3 cable to a computer (i.e NC500 console, FMD Gen 3 microscope driver...). To update the firmware version, **close** *Doric Neuroscience Studio*.

1. **Open** *Doric Maintenance Tool*.
2. **Turn ON** the device.
3. In the list under *Name*, **select** the device to update (its status needs to be *Connected*) (Fig. 2.20).
4. **Select** *Check for server updates*. *Doric Maintenance Tool* will connect to the server and verify if an update is available (Fig. 2.20).
5. Under *Motherboard Version* (and *Channel(s) Version* if applicable to the device), the present versions and the available versions are displayed (Fig. 2.16).

6. **Select** *Update from the server* to launch the update. (Sometimes, an update may be necessary without using the server version. In this case, a representative of Doric Lenses will send you an updated file and you must use *Update manually* instead of *Update from server*) (Fig. 2.20).

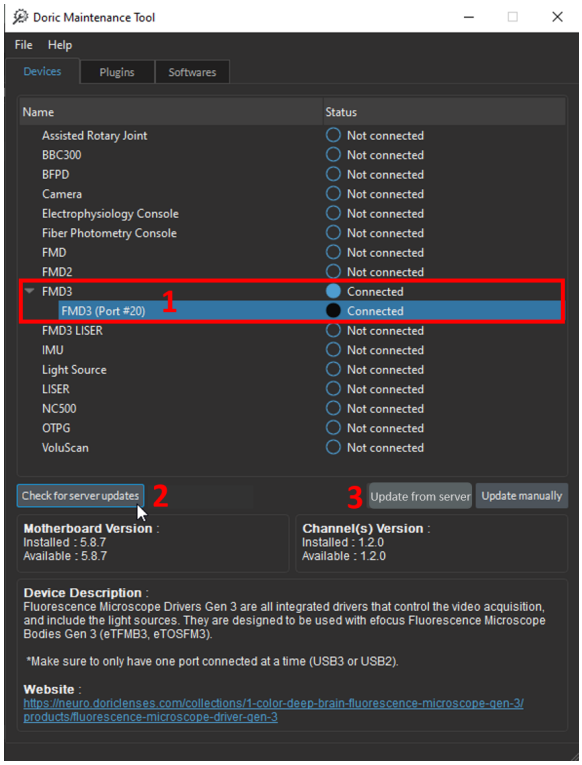


Figure 2.20: *Doric Maintenance Tool home page*

7. **Choose** between updating the *Motherboard* or the *Channels* (if you need to update both, **select** *Channels* first, then repeat the process for the *Motherboard* once the first update is successful) (Fig.2.21).

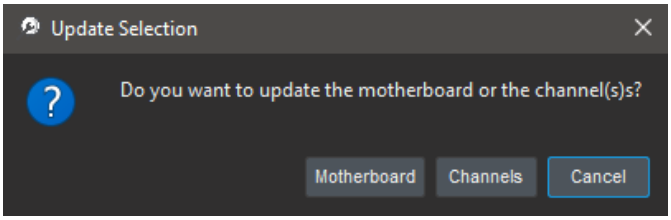


Figure 2.21: *Doric Maintenance Tool Update Selection*

8. At the end of the update, a pop-up window will offer *to update the USB3 driver as well* (Fig.2.22). We recommend doing it with usage of the latest versions of Doric Neuroscience Studio v6. Before choosing to do this update and pressing *OK*, you will need to **change the configuration of the device from an *Operating* mode to a *Programming* one**. To do so, turn OFF the device, and **slide** the small cursor at its back located at one side of the USB service port **from O to P** using your nail or a non sharp tip (Fig. 2.23).

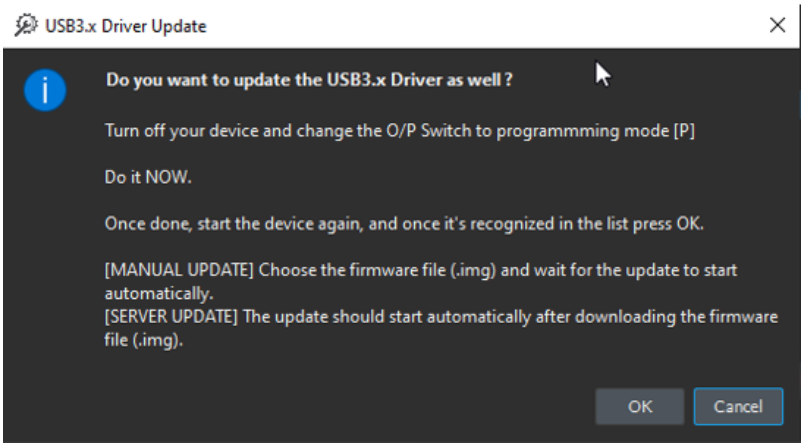


Figure 2.22: *Doric Maintenance Tool USB3 driver selection*

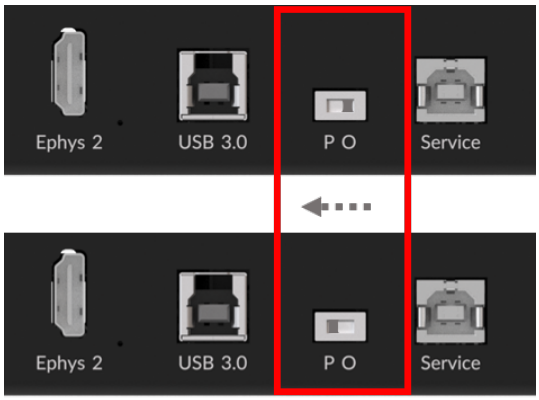


Figure 2.23: *USB3-driven devices, switch from Operating to Programming mode*

WARNING:
Do **NOT** turn **OFF** the device while an **update is in progress**.

9. **Turn ON** the device again and once it is recognized in the list, press *OK*. Another pop-up message will now ask you to choose the type of device you are updating (Fig. 2.24). Once you pressed on its corresponding button, the update should start automatically after downloading the firmware file.

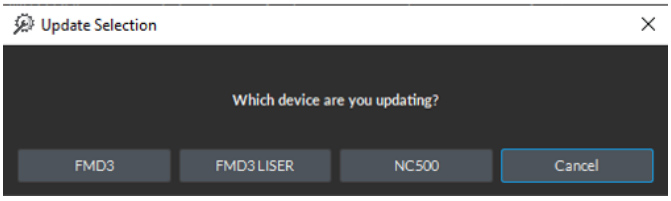


Figure 2.24: *USB3-driven devices, choice of the device to be updated*

10. **Wait** the end of the installation and when done, a message confirming for a *successful update* will appear (Fig. 2.25). It will invite you to press OK, which might automatically disconnect the device that will then reappear in Doric Maintenance Tool.

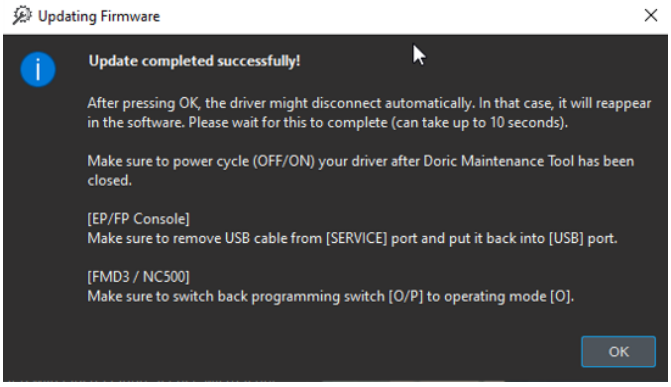


Figure 2.25: *USB3-driven devices, successful update*

11. **Close** *Doric Maintenance Tool*, **turn OFF** your device and switch back from ***Programming* mode to *Operating mode*** (reverse step as the one indicated at point 8.) (Fig. 2.23).
12. **Turn ON** the device and start *Doric Neuroscience Studio*.

3

Downgrading to DNS version 5

If your DNS is currently in version 6, see section 3.1.1 below for instructions on how to downgrade it to version 5. Note, using new or upgraded devices in DNS v5 also requires a firmware downgrade for each product, or else DNS v5 will not recognize the device(s) (see sections 3.2 and 3.2.3).

If you do not know which version of DNS you are currently using, see section 2.2.

3.1 Software Downgrade

3.1.1 Download *DNS version 5*

1. **Uninstall** *Doric Neuroscience Studio* version 6.
2. **Download** *Doric Neuroscience Studio* version 5 by clicking on the following link HERE.

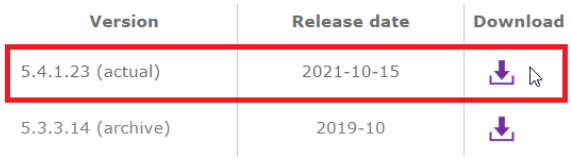


Figure 3.1: *Download DNS v5 from Doric Lenses website*

3. **Run** the "Setup Doric Studio" execution file and follow the installation instructions. (See section 2.1.1 for a detailed step-by-step procedure.)
4. **Launch** DNS v5.

3.1.2 Download *Doric Maintenance Tool*

If not already installed, **download** *Doric Maintenance Tool* from the following link HERE. See section 2.1.2 for a detailed step-by-step procedure.

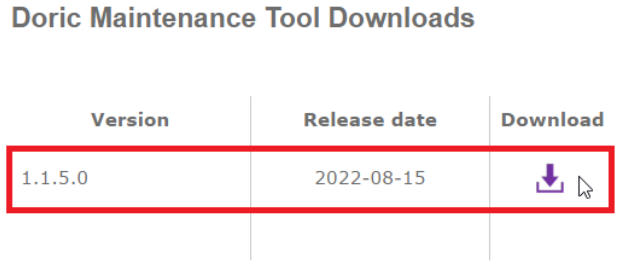


Figure 3.2: *Download Doric Maintenace Tools from the Doric Lenses website*

3.2 Firmware Downgrade

3.2.1 Before getting started

- Verify that your hardware model is compatible with firmware updates. In doubt, please contact our technical support. (see section 5)
- It is highly recommended to use a computer running on Windows 10 to perform firmware updates.
- Make sure you have installed *Doric Maintenance Tools*. If not, see section 3.1.2.
- Firmware downgrade is a critical operation, as it could make the device unusable if the programming is not done correctly. We offer technical support during firmware updates via Remote Desktop control sessions. Do not hesitate to download the TeamViewer application and to **schedule a remote session with us** (see section 5).

3.2.2 Downgrade Instructions for *LED Driver*

1. **Download** the firmware .HEX files of the devices you want to downgrade (if available). Firmware downgrades are available for: *Light Sources Drivers*, *Fiber Photometry Consoles*, *Bundle Fiber Photometry Driver*, *Optical TTL Pulse Generator*, and *Behavior Camera*.

   DOWNLOAD FIRMWARE FILES HERE

   In this example, we will update a *LED driver* (Fig. 3.3). (See Section 3.2.3 for *Fiber Photometry Console* example, as there are slight differences in the process.)

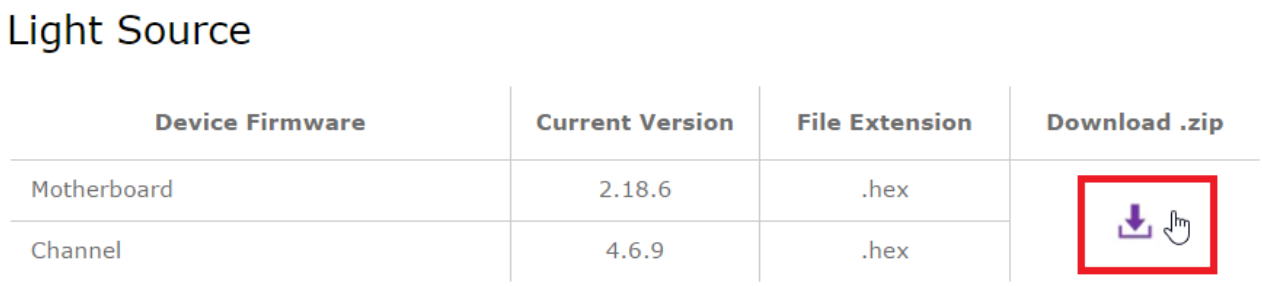


Figure 3.3: *Download a .hex file from our website for each device that needs to be downgraded*

2. **Turn** ON the device you wish to downgrade. **Open** *Doric Maintenance Tool* application. Make sure to **close** *Doric Neuroscience Studio*.

Figure 3.4: *Open Doric Maintenance Tool software*

Note: Always downgrade the firmware of **ONE device** at a time. All other devices should be **turned OFF** to avoid possible conflict when erasing device programming.

3. **Select** the device to downgrade, and **click** Update Manually.

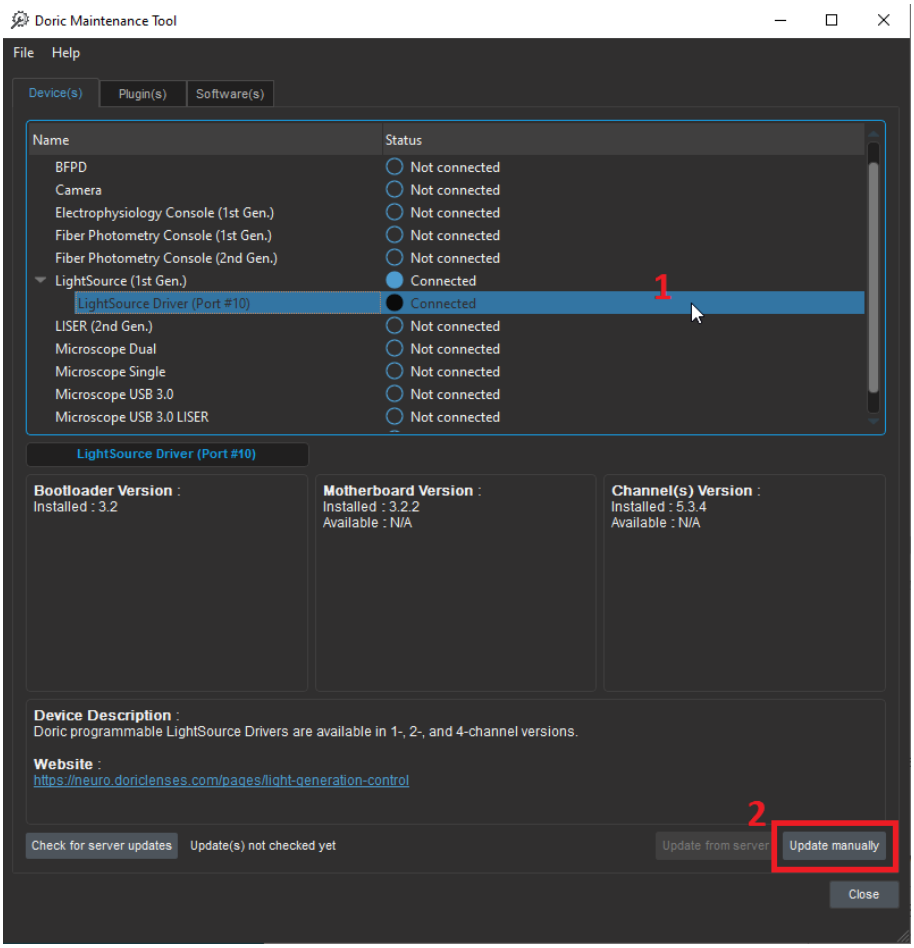


Figure 3.5: *Select the device and the Update Manually button.*

4. Carefully read this message before **selecting** the OK button.

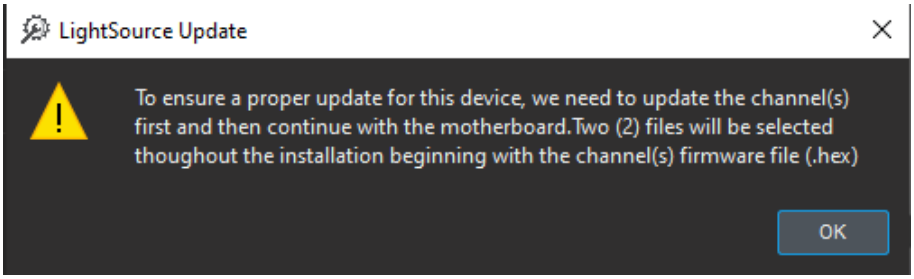


Figure 3.6: *Warning Message*

REMEMBER: Upgrade the channel first, the motherboard second.

5. From the file extension dropdown (1 in Fig. 3.7), **select** the bottom option from the list (DriverHybridChannel*.hex, in this case). Then **find** and **select** the .hex file that you saved earlier (from step 1, Fig. 3.3). You may need to go to the documents or downloads folder to find those downloads. Finally, **select** Open button to start the downgrade process.

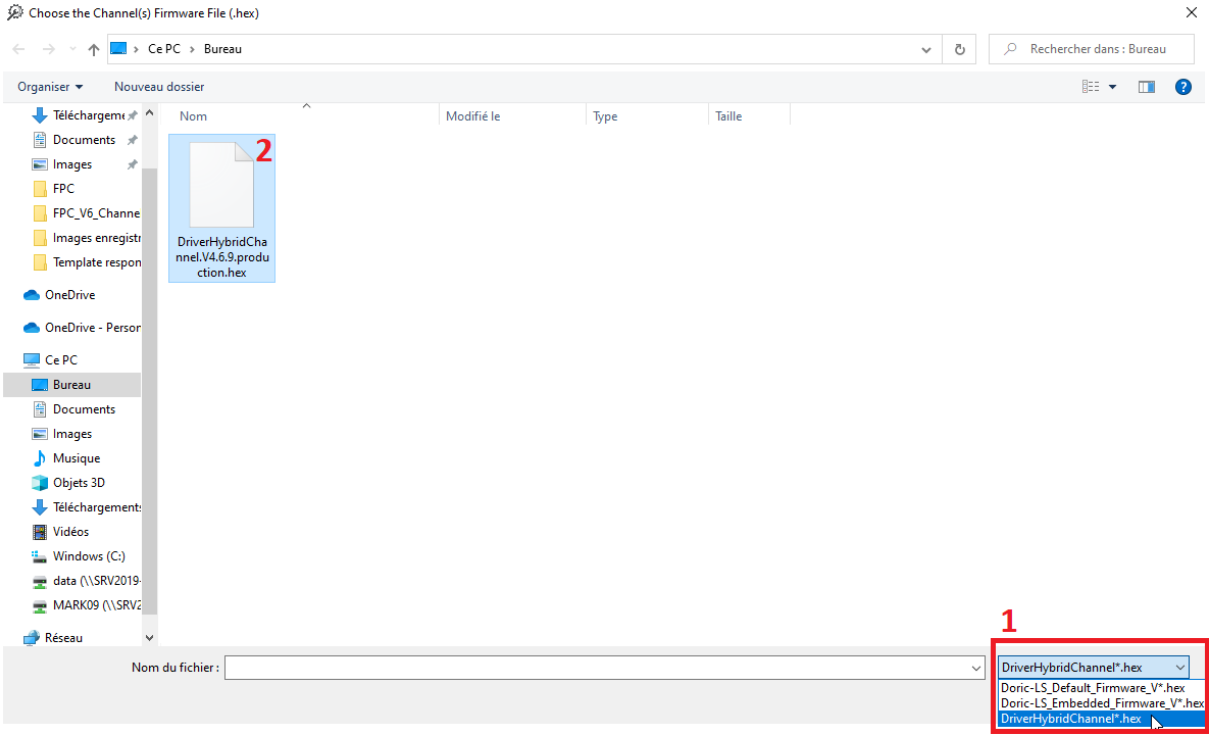


Figure 3.7: *Select the proper Channel .hex extension and the downloaded file*

6. **Wait** until the loading is completed.

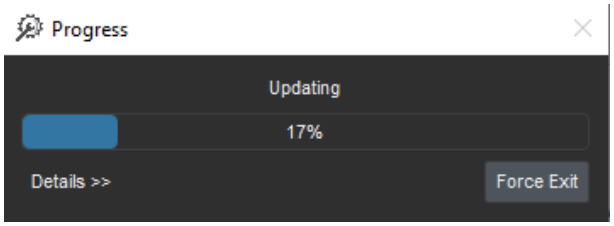


Figure 3.8: *Example loading bar*

WARNING:
Do **NOT** turn **OFF** the device while an **update is in progress**.

7. Repeat similar steps to downgrade the motherboard firmware: **Select** the bottom option from the list (Driver-HybridMotherboard*.hex, in this case). Then **find** and **select** the .hex file that you saved earlier (from step 1, Fig. 3.3). Finally, **select** Open to start the downgrade process.

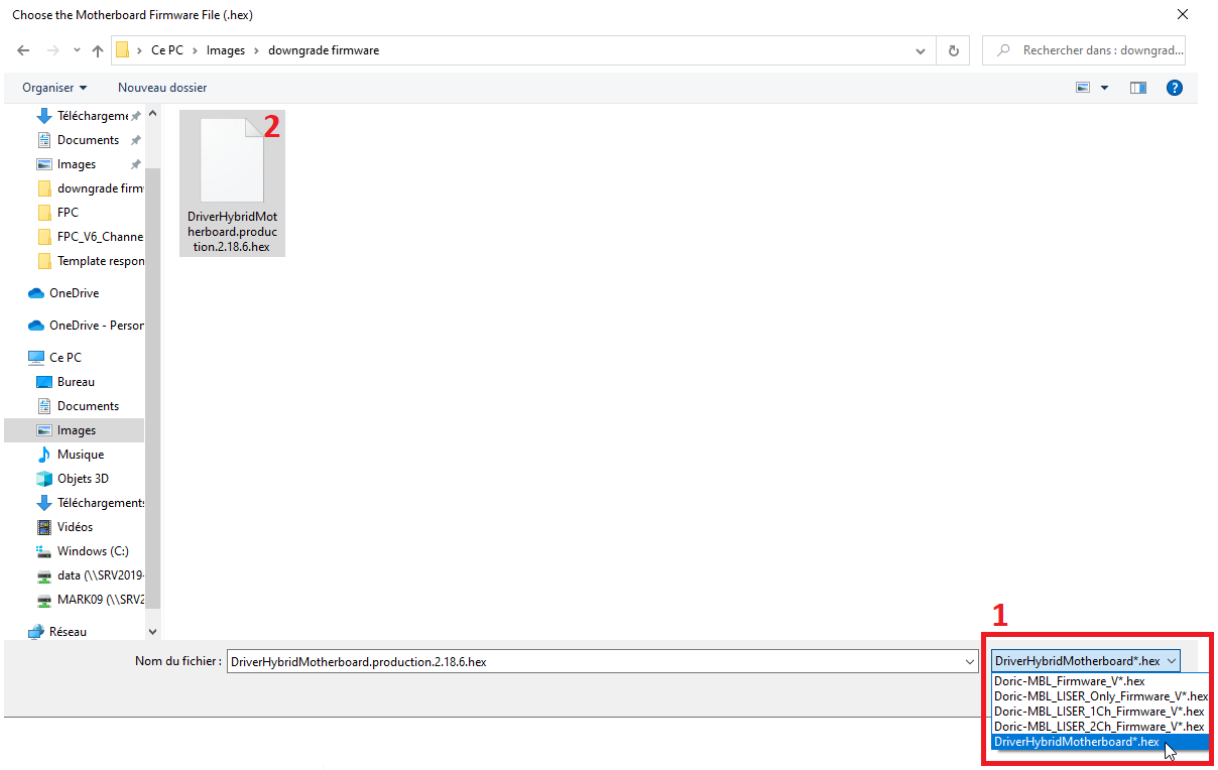


Figure 3.9: *Select the proper Motherboard .hex extension and the downloaded file*

8. **Wait** until the loading is completed.

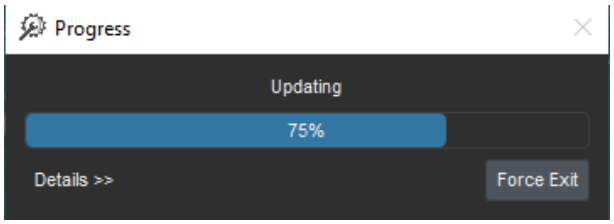


Figure 3.10: *Example loading bar*

WARNING:
Do **NOT** turn **OFF** the device while an **update is in progress**.

9. **Select** the OK button.

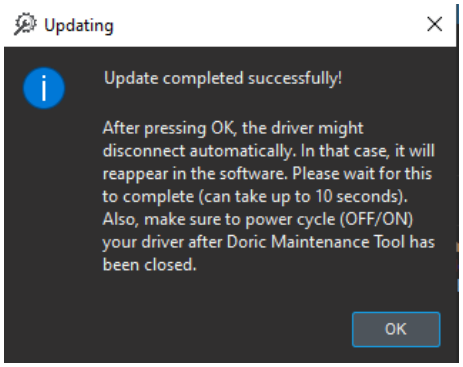
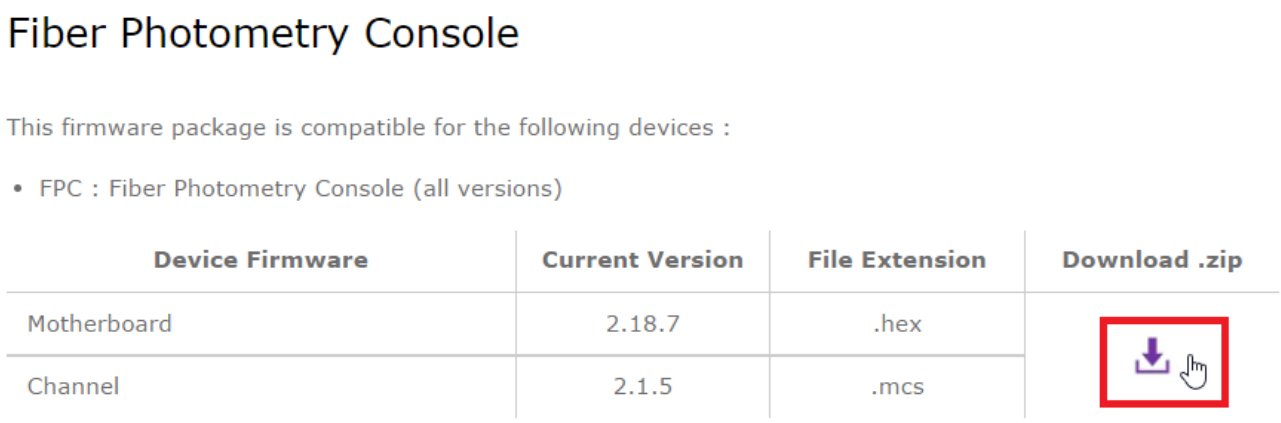


Figure 3.11: *Successful downgrading message.*

10. **Turn OFF**, the LED driver and **close** Doric Maintenance Tool.
11. **Turn ON** the device, then **open** Doric Neuroscience Studio version 5.

3.2.3 Downgrade Instruction for the *Fiber Photometry Console*

1. **Download** the firmware .HEX files *Fiber Photometry Console*.
   DOWNLOAD FIRMWARE FILES HERE



Fiber Photometry Console

This firmware package is compatible for the following devices :

- FPC : Fiber Photometry Console (all versions)

Device Firmware	Current Version	File Extension	Download .zip
Motherboard	2.18.7	.hex	
Channel	2.1.5	.mcs	

Figure 3.12: *Download .hex file from the Doric Lenses website*

2. **Turn** ON the device you wish to downgrade. **Open** *Doric Maintenance Tool* application.

Figure 3.13: *Open Doric Maintenance Tool software*

Note: Always downgrade the firmware of **ONE device** at a time. All other devices should be **turned OFF** to avoid possible conflict when erasing device programming.

3. **Select** the device to downgrade, and **click** *Update Manually* (Fig. 3.14).

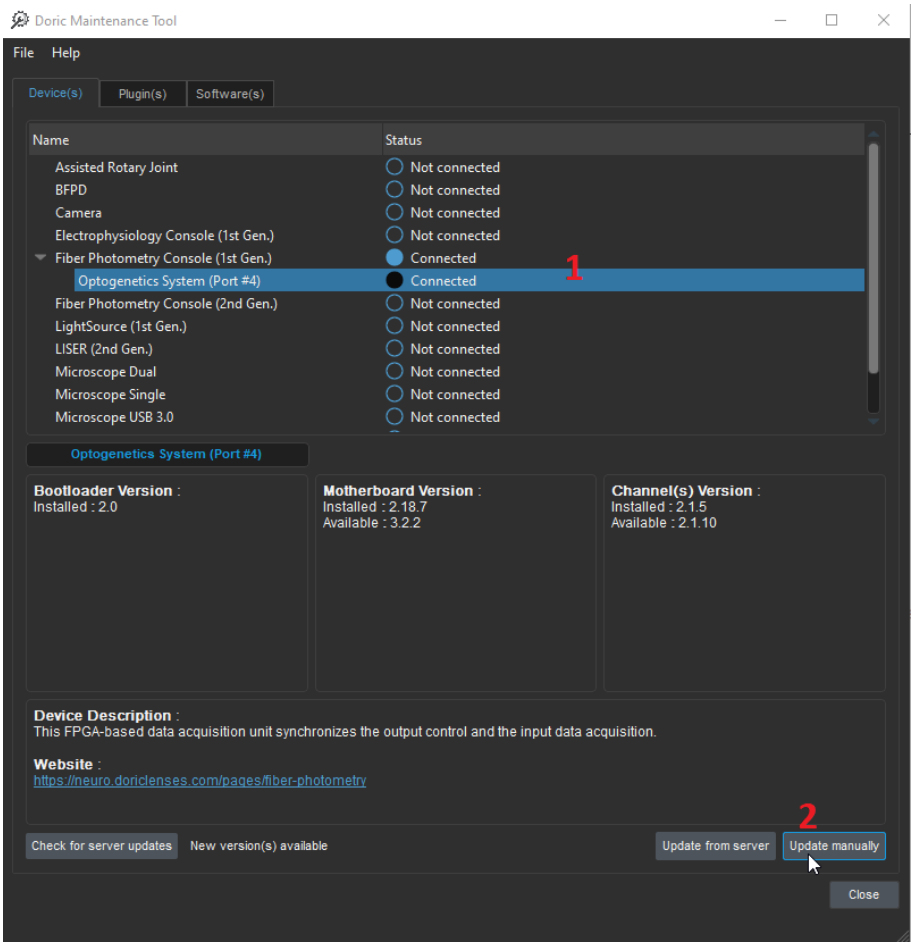


Figure 3.14: *Select the device and the Update Manually button.*

4. **Select** the *Channels* button.

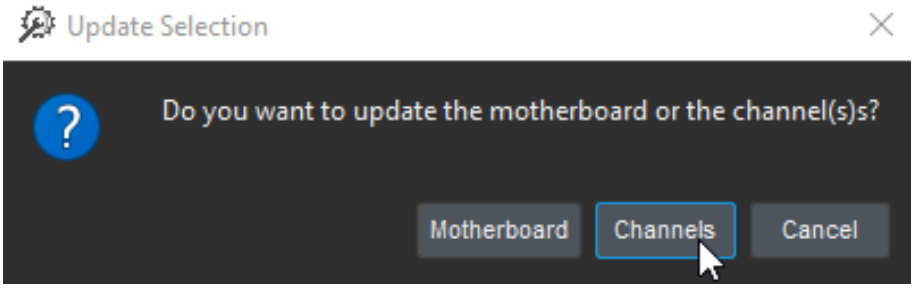


Figure 3.15: *Select the Channel button.*

*****REMEMBER: Upgrade the channel first, the motherboard second.*****

5. **Unplug** the USB cord connected to the *Fiber Photometry Console* and **plug** it into the service port at the other side of the console, as per Fig. 3.16. Then **select** the OK button (Fig. 3.17). Note that it is normal for the name of the device connected to the computer to change to *Channels* (FPGA (Port #) when the USB is connected to the service port.

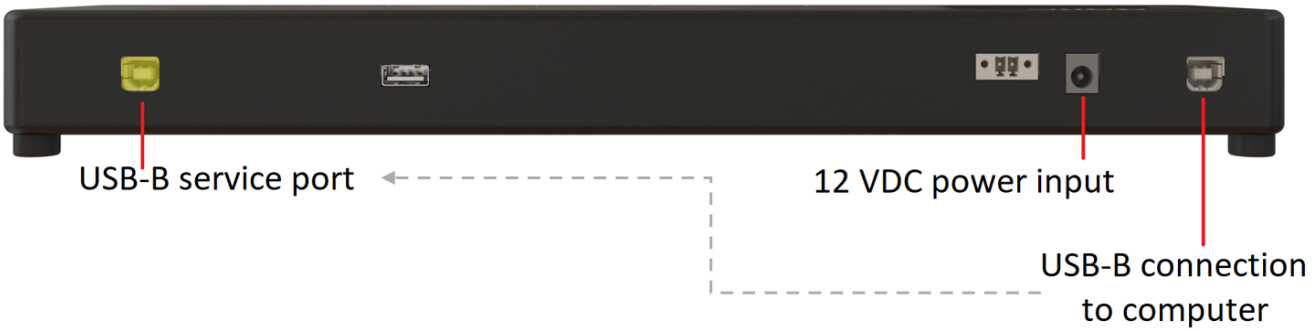


Figure 3.16: *Change the location of the USB connection to the service port*

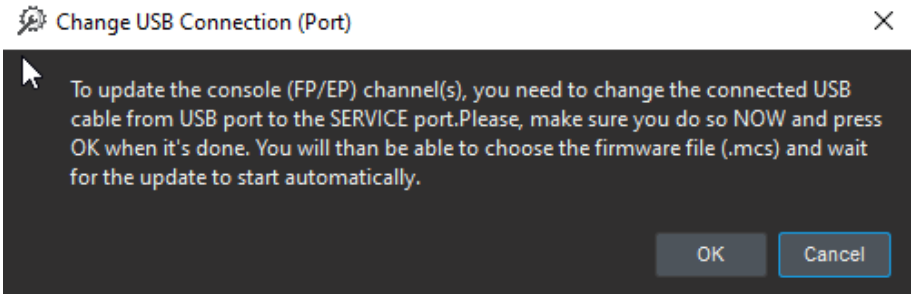


Figure 3.17: *Change the USB location message*

6. **Find** and **select** the .hex file that you saved earlier (from step 1, Fig. 3.12). You may need to go to the documents or downloads folder to find those downloads. Finally, **select** Open button to start the downgrade process.

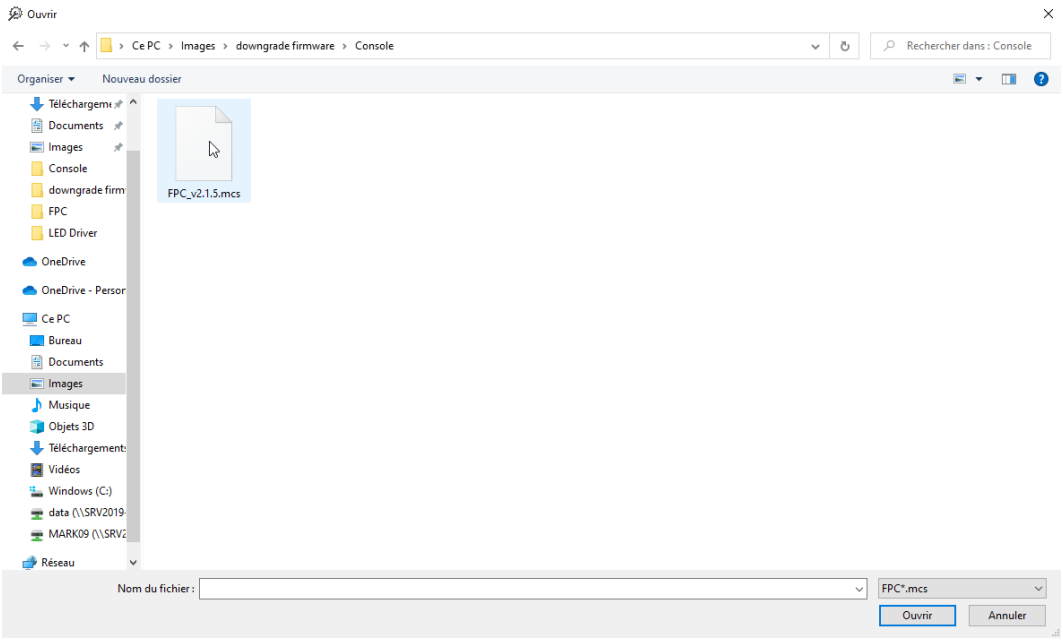


Figure 3.18: *Select .hex file*

7. **Wait** until the loading is completed.

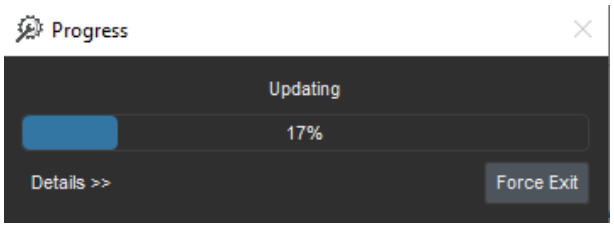


Figure 3.19: *Example loading bar*

WARNING:
Do **NOT** turn **OFF** the device while an **update is in progress**.

8. **Select** the OK button.

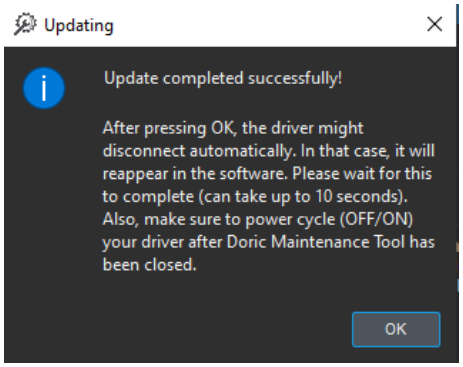


Figure 3.20: *Successful downgrading message.*

9. **Turn OFF** the *Fiber Photometry Console* and then **turn** it back ON.

10. Next, to downgrade the Console's motherboard, **re-plug** the USB cable into its usual spot (*i.e.* NOT the service port), as per Fig. 3.21.

Figure 3.21: *Replace the USB cable to the regular port*

11. **Select** the device one more time, and **click** *Update Manually*.

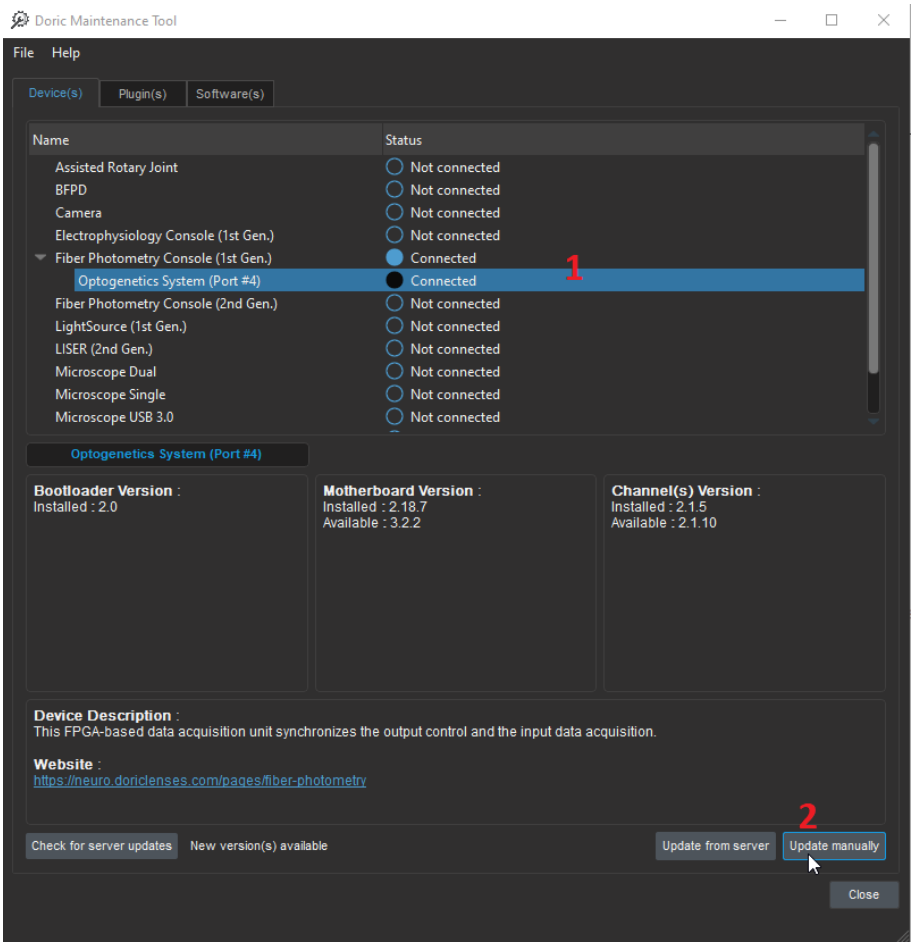


Figure 3.22: *Select the device and the Update Manually button.*

12. **Select** the *Motherboard* button.

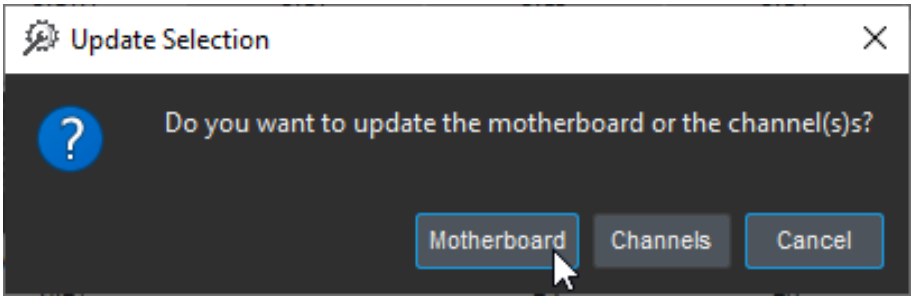


Figure 3.23: *Select the Motherboard button.*

13. **Select** the bottom option from the dropdown list (DriverHybridMotherboard*.hex, in the case of Fig. 3.24). Then **find** and **select** the .hex file that you saved earlier (from step 1, Fig. 3.12). Finally, **select** *Open* button to start the downgrade process.

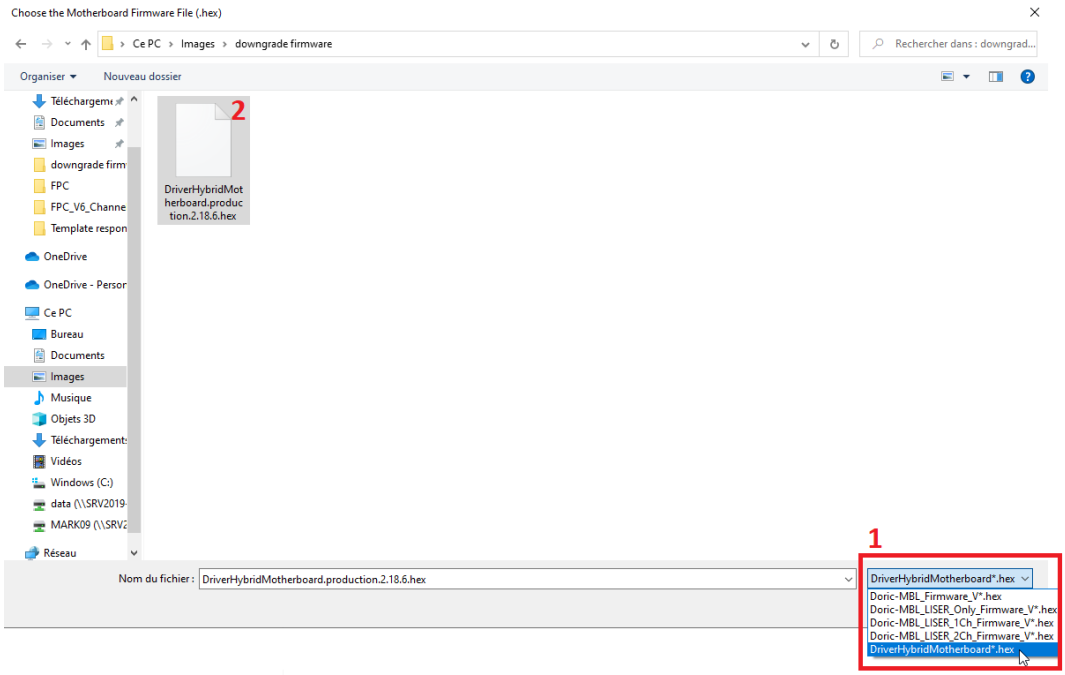


Figure 3.24: *Select the proper Motherboard .hex extension and the downloaded file*

14. **Wait** until the loading is completed.

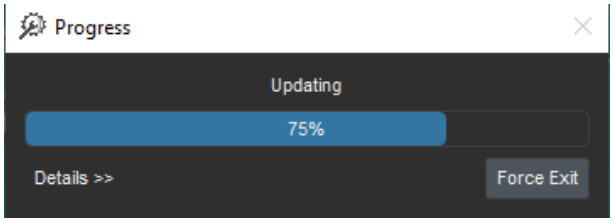


Figure 3.25: *Example loading bar*

WARNING:
Do **NOT** turn **OFF** the device while an **update is in progress**.

15. **Select** the *OK* button.

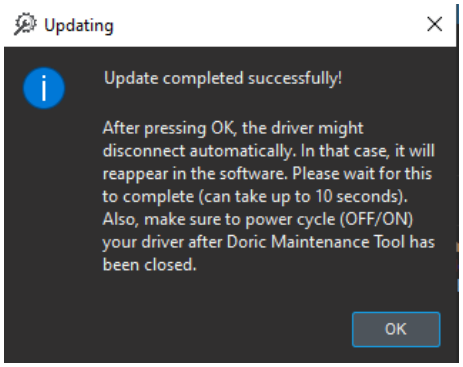


Figure 3.26: *Successful downgrading message*

16. **Turn OFF** the *Fiber Photometry Console* and **close** *Doric Maintenance Tool*.
17. **Turn ON** the device, then **open** *Doric Neuroscience Studio* version 5.

4

Specifications

Table 4.1: *Doric Neuroscience Studio Hardware Requirements*

SPECIFICATIONS	VALUE	NOTES
Operating System	Windows 7, 8 , 10	64-bit
Memory (Minimum/Recommended)	4 GB/16 GB	
Processor Speed (Minimum/Recommended)	2 Ghz Quad-Core i5/ 3.46 Ghz Eight-core i7	
Hard Drive	500 MB	

Table 4.2: *Doric Neuroscience Studio Module Hardware Requirements*

MODULE	REQUIRED HARDWARE	NOTE
Microscopy	Dedicated Graphics Card i7 or greater CPU Gigabit ethernet card	Do not use a USB to ethernet adapter
Behavior Camera	Power USB3 or Gigabit ethernet port	

Figure 4.1: *Detailed Comparison between DNS version 5 and 6*

	DORIC NEUROSCIENCE STUDIO	
	V5.4.1.23	**V6.0.1.0**
		
File Format		
Microscope	.tiff .doric (HDF5)	.doric (HDF5)
Fiber photometry	.csv .doric (HDF5)	.doric (HDF5)
OTPG	.csv	.doric (HDF5)
Behavior camera	.avi	.avi - .mp4 - .mkv - .mpeg ,doric(HDF5) for config and timestamp
Read Files Example	Matlab - Octave	Matlab - Octave - Python - R
Device support		
Available Modules	OTPG_4, OTPG_8 LEDD, LEDFLS, LDMD, LDFLS, CeYAG FPC, EPC Gen.1 BFPD FMD Gen.1, FMD-2C Gen.2 (Ethernet) Behavior camera	OTPG_4, OTPG_8 LEDD, LEDFLS, LDMD, LDFLS, CeYAG LISER *NEW FPC, EPC Gen.1 BFPD FMD Gen.1, FMD-2C Gen.2 (Ethernet) FMD Gen.3 (USB3) *NEW Behavior camera
Unsupported products	released after 2021 (FMD Gen.3, LISER, …)	released before 2015 (LEDRVP & OPTG_4 Gen.1)
Firmware updates	Manual update	Doric Maintenance Tool update from web server
DLL for third party integration	OTPG, Light sources	OTPG, Light sources
Updates	No more update	Free updates with new functionalities as key press Event recording, custom waveform analog voltage output, and more…
Analysis Modules		
Video and trace viewer & basic animal video tracking	Behavioral Tracking Analyzer	Behavior Analyzer
Microscope data analysis (align, dF/F, …)	Image Analyzer	Image Analyzer
Ephys Data analysis (filters, spike finder, …)	Electrophy Analyzer	Signal Analyzer
Photometry data analysis (baseline correction, dF/F, …)	Photometry Analyzer	
Light propagation simulation	Optrode Simulator	Optrode Simulator (soon)
File viewer reader	-	HDF5 Viewer

5

Support

5.1 Contact us

For any questions or comments, do not hesitate to contact us by:

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