



How to downgrade to a previous motor firmware on a Shimano STePS system via Bluetooth and an iOS device

Please take care:

Starting with Shimano's Bluetooth based E-Tube-Project-Cyclist app version 5.0.3 it is NO more possible to process the downgrade process which is described in this document!

For sure we try to find solutions and workarounds for this solutions as soon as possible!

If you currently have installed an older version of the E-Tube-Project-Cyclist app (e.g. 5.0.2) on your iOS device, then please deactivate the internet connection before starting the E-Tube app to prevent that the app will automatically update itself.

In this way you could process the described process also in the future.

If you (temporarily) have access to an Android smartphone, you can process the downgrade also via this smartphone, see [here](#).

Important:

Please don't downgrade an EP8-CRG drive unit (mostly used on cargo bikes) currently to motor firmware 4.0.2, because this could result in a non-functional drive unit!

Please don't downgrade a DU-E61X0-CRG drive unit (mostly used on cargo bikes) currently to motor firmware 4.5.0, because this could result in a non-functional drive unit!

A Cargo ("CRG") drive unit could easily be identified via the „CARGO“ signature on the left side of the motor housing:



There are situations when a previous (original) **STePS** motor firmware has some significant advantages compared to the currently available latest firmware from Shimano. However, normally it is not possible to install an older firmware to the drive unit with the Bluetooth based **E-Tube** app from Shimano if a newer version is already installed.

We generally recommend performing such a so-called "downgrade" with the help of a PCE1 or PCE02 interface, because only with this interface is it possible to return the bike to a normal functioning state in the very rare event of a problem, see also [here](#). Further information on the downgrade is available via [this link](#).

This document describes how it is still possible to install such an older firmware on the bike via **Bluetooth** (i.e. without the additional PCE interface required).

Please don't be put off by the length of this document - the downgrade is very easy to process - every step was just described in detail to avoid misunderstandings. Ideally, please print out this document and mark each step after it has been carried out successfully.

Important:

We do not assume any guarantee or liability for the described downgrade process and hereby expressly point out to the user that he is acting on his own responsibility!

What is required for the downgrade?

The following components are required to carry out the downgrade process described in this document:

- iOS device (iPhone or iPad) on which the current version of the **E-Tube** App (free download from Apple's AppStore, see also [here](#)) is installed and which is already properly set up so that the bike can be accessed via Bluetooth without any problems and corresponding information from the bike can be displayed and changed. If you have any problems, please try to solve them beforehand via [this website](#) (especially via the links at the end of the page). Chapter 15 in [this document](#) can also be helpful in this regard.
- Windows computer with Win7 - Win11 (or Apple Macintosh on which a Windows operating system is installed)
- USB cable for connecting the iOS device to the Windows computer
- the corresponding older (original) firmware files which should be installed on the bike (see also later in the document in step 2)
- a special, freely available software (**3UTools**) for access and file manipulation on the iOS device (see also later in the document in step 5)
- the **STePS**-based bike on which the older firmware should be installed and on which the latest firmware for all **STePS** components is already installed. If not all components have been updated already to the latest firmware version, please do this beforehand with the **E-Tube** app.
- ease, comfort and some patience - please do not rush through the following process in a hurry!

Remark:

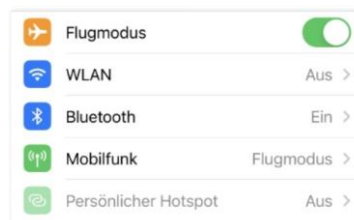
The described instructions on the following pages are not suitable for the use of an Apple Mac (Macintosh) which only runs MacOS. When using a Mac, it is essential to install Windows (native or in a virtual environment), as the **3UTools** software used later only will work with Windows!

However, on a Mac you can use the software [iFunBox](#) or [AnyTrans](#) in a very similar way like the **3UTools** software which is used in this document.

Step 1 of 8: Preparing the iOS device for the firmware - update through the E-Tube app

Please note the following precautionary measures to ensure that the firmware update of your **STePS** bike runs smoothly in the following steps of this document:

- Please exit all non-used apps (don't just swipe them to the background!) to free enough memory for the necessary Bluetooth data transfer (Best practice is to repower the smartphone).
- Please assure that the bike and smartphone is fully charged.
- Please assure that the smartphone is not automatically changing to standby mode or deactivating the display after some time.
- Please deactivate the WLAN access (see iOS - "Settings").
- Please deactivate the telephony function in order not to interrupt the wireless data transmission via Bluetooth due to an incoming call.
- Ideally, use the "Airplane mode" function for the two points mentioned above.
- Make sure that the Bluetooth function is still activated.
- Please ensure that you do not move the iOS device or the bike while the firmware is being updated and that you maintain a constant distance between the bike display and iOS device of at least 0.5 meters and a maximum of 2 meters!



These precautionary measures are very important, as an interrupted data transfer via Bluetooth can be very problematic when updating the firmware, see also [here](#).



You now have successfully processed step 1 ...

Step 2 of 8: Update the firmware of all STePS components **BUT NOT THE DRIVE UNIT to the latest version through the E-Tube app**

Now invoke the **E-Tube** app (see [here](#)).

If **E-Tube-Project** will indicate any new firmware for any Shimano STePS components, please update all components (display, control switches, electronic derailleur, etc.) **BUT NOT THE DRIVE UNIT (also known as MOTOR)** to the latest firmware version now.

In case any help is needed you will find related links on the bottom of this [official internet page from Shimano](#).

Please take care:

Normally such a firmware update just takes several (normally 2-5) minutes.

However, it may happen that the E-Tube app will look like non-functional anymore because there is no action for several minutes in some situations. Please never interrupt the process in such a situation and bravely wait! We already had situations like this when E-Tube came back to life after nearly an hour with a perfect finished process.

After the firmware update has been completed correctly and/or all Shimano STePS components are on the latest firmware version, the **E-Tube** app should be closed again. Please repower your bike.



You now have successfully processed step 2 ...

Step 3 of 8: Download and extract the required older firmware files on the Windows computer

As a first step, the required older (original) firmware version of the Shimano system must be available on the Windows computer. Currently relevant downgrade packages can be found via the following links:

[DU-EP800 \(EP8\) Firmware 4.0.2](#)

[DU-E80X0 \(DU-E8000 & DU-E8080\) Firmware 4.8.0](#)

[DU-E80X0 \(DU-E8000 & DU-E8080\) Firmware 4.6.1](#)

[DU-E80X0 \(DU-E8000 & DU-E8080\) Firmware 4.5.1](#)

[DU-E80X0 \(DU-E8000 & DU-E8080\) Firmware 4.3.2 \(*\)](#)

[DU-E7000 Firmware 4.5.0](#)

[DU-E61X0 \(DU-E6100, DU-E6110 & DU-E6180\) Firmware 4.5.0](#)

[DU-E50X0 \(DU-E5000 & DU-E5080\) Firmware 4.3.0](#)


(*) Motor firmware 4.3.2 will only run in combination with an SCE8000 display!

(*) Motor firmware 4.3.2 will **not** run in combination with the new Shimano ("**InTube**") batteries BT-E8016, BT-E8035 (-L) and BT-E8036 which integrated into the bicycle frame!

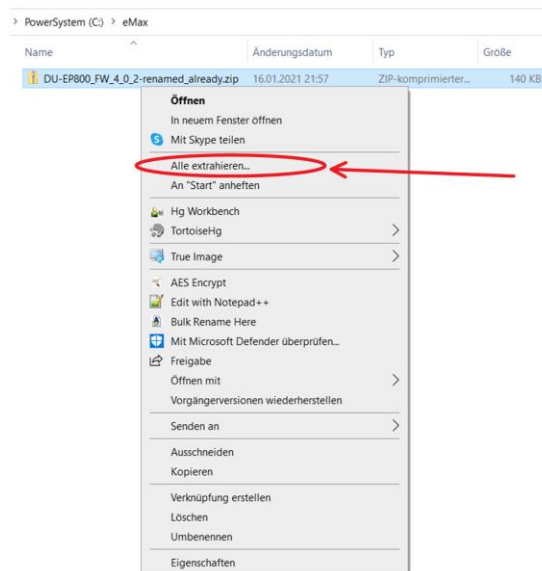
Please download the compressed firmware file package for the matching type of drive unit on your bike to your Windows computer using the internet link shown above and then unzip the package accordingly.

Ideally, copy the downloaded ZIP file after downloading it into a well-known directory you have created by yourself (e.g. "**C:\eMax**") on the computer before, so that you later will know the exact storage location and will find it again.

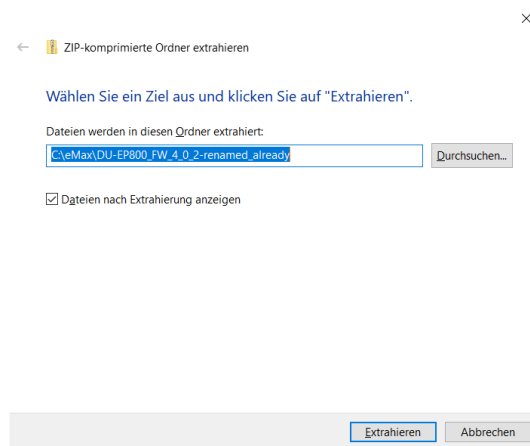
Hereinafter we will use the downgrade of an EP8 motor to motor firmware 4.0.2 as an example:

PowerSystem (C:) > eMax			
Name	Änderungsdatum	Typ	Größe
 DU-EP800_FW_4_0_2-renamed_already.zip	16.01.2021 21:57	ZIP-komprimierter...	140 KB

Now "unzip" this downloaded compressed file => With most Windows versions, this works by marking (single click, then this file is highlighted in blue) the downloaded file and then using the right mouse button:





Now select the menu item "**Extract all...**":



Ideally, use the suggested folder and then press the "**Extract**" button.

The individual files in the downloaded compressed file are now automatically extracted and then displayed in the newly created directory:

> PowerSystem (C:) > eMax > DU-EP800_FW_4_0_2-renamed_already			
Name	Änderungsdatum	Typ	Größe
 DUEP800-D.5.0.0.dat	16.01.2021 22:08	DAT-Datei	140 KB
 DUEP800-M.5.0.2.dat	16.01.2021 22:08	DAT-Datei	106 KB

Please note this directory in which these firmware files are located for the following actions. (the directory name varies depending on the downloaded file).



You now have successfully processed step 3 ...

Remarks:

If the Windows operating system used does not contain a built-in function for unpacking a compressed file, then please use one of the many programs available for this purpose (e.g. **WinZip**, **7Zip**, **WinRar**, etc.).

If other firmware files of the **STePS** system should be required, please write a short email to info@eMax-Tuning.com stating the desired component and firmware version.

Step 4 of 8: Establish a connection between the iOS device and Windows computer

Connect your iOS device to the computer using the USB cable.

If necessary, confirm any corresponding messages on the computer if they should appear.

Please allow the connection to the computer if a corresponding message should appear on the iOS device.

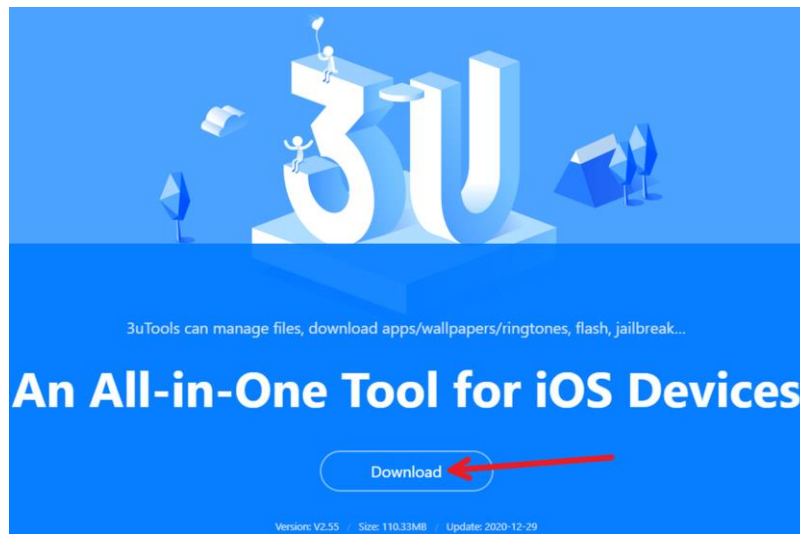
If the iOS device has never been connected to this computer before, please wait until all automatic installations have been completed.



You now have successfully processed step 4 ...

Step 5 of 8: Install 3UTools on the Windows computer and establish access to the corresponding iOS device

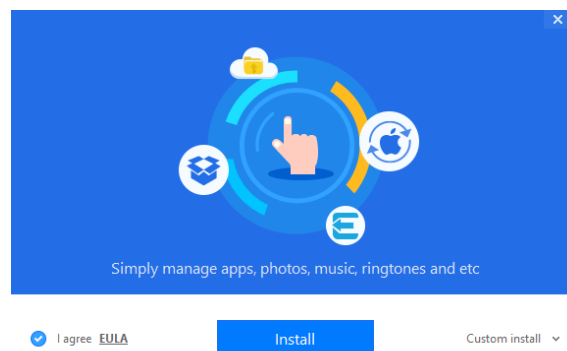
Now follow the Internet link www.3u.com and open the **3UTools** page:



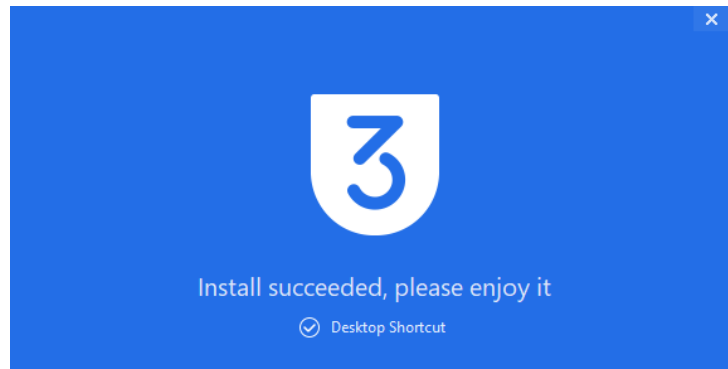
Press the "**Download**" button and then select "**Open**" in the dialog that appears:



Press the "**Install**" button in the following dialog:



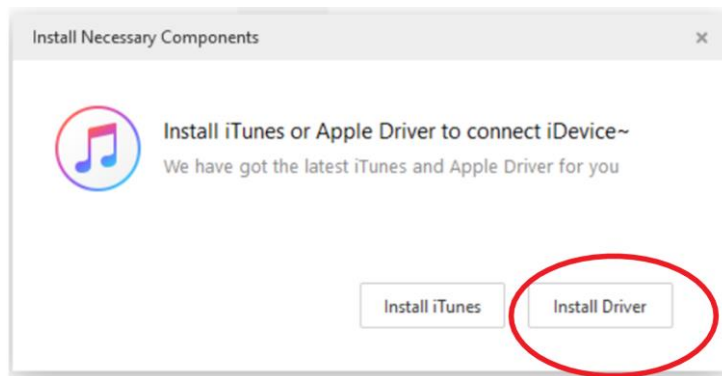
Now the **3UTools** program required for enhanced file access on your iOS device will be installed on your computer:



Launch

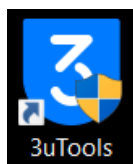
After the installation is complete, please press the "**Launch**" button to start the **3UTools** program.

If you have not yet installed any drivers or iTunes from Apple on your computer, the following dialog will most likely appear soon:

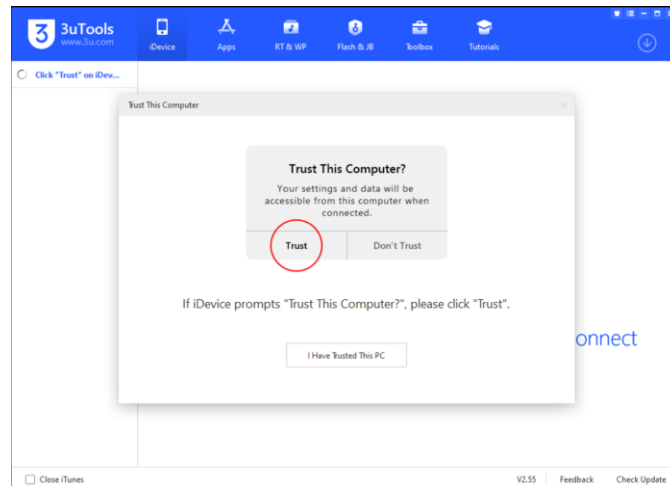


It is not necessary to install the complete iTunes program on the computer and it is sufficient if the drivers for the iOS device are installed using the "**Install Driver**" button. Depending on the version of the Windows operating system, it may be necessary to restart the computer.

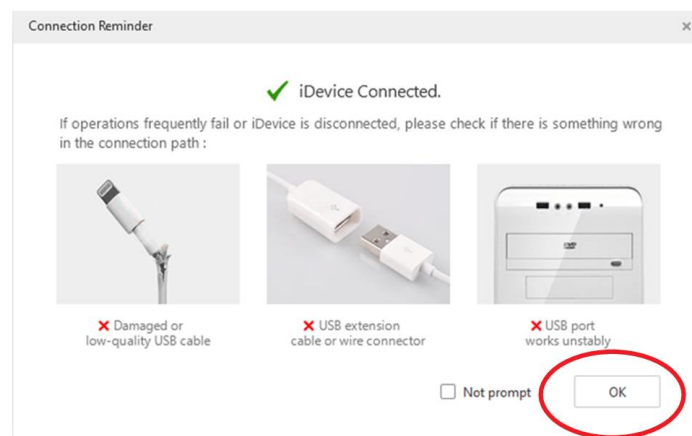
After restarting Windows, restart the program using the **3UTools** link that has been added to the desktop:



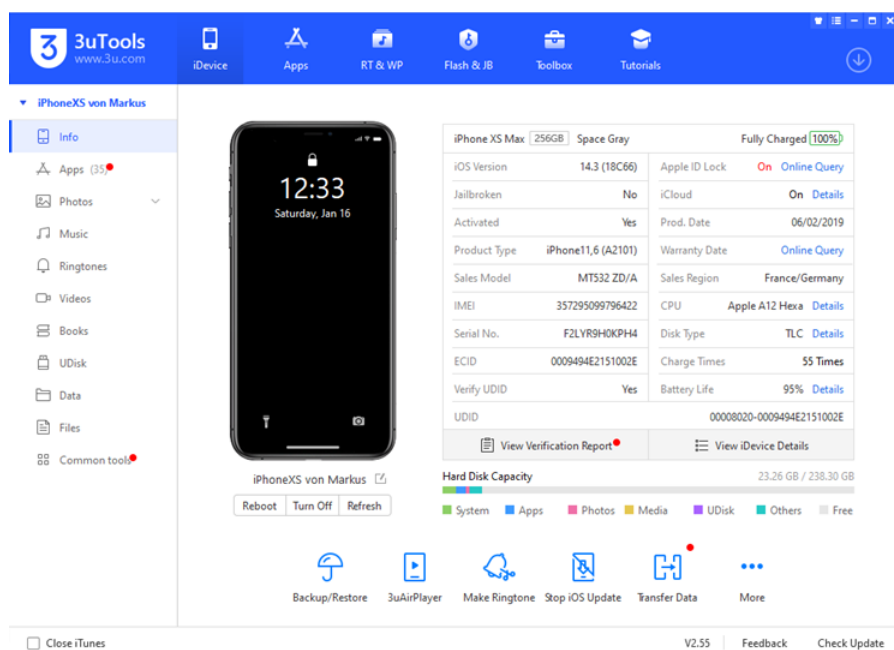
If this message should appear when starting **3uTools**, you must allow the connection to the computer on the iOS device via the dialog displayed on the iOS device:



Now this dialog should appear on the Windows computer:



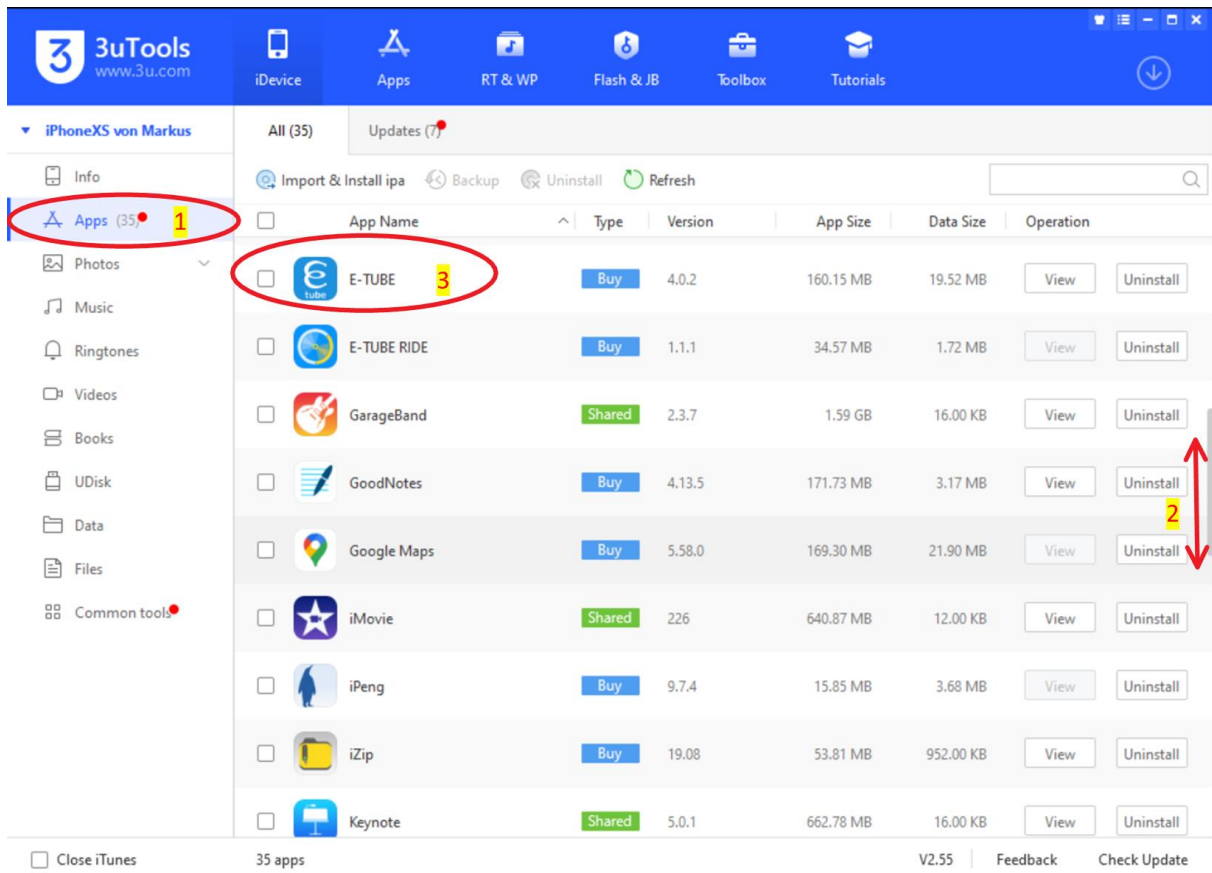
Please press the "**OK**" button, whereupon a view similar to the following picture should appear with a lot of information about your connected iOS device:



 You now have successfully processed step 5 ...

Step 6 of 8: Copy the required firmware files to the corresponding iOS device

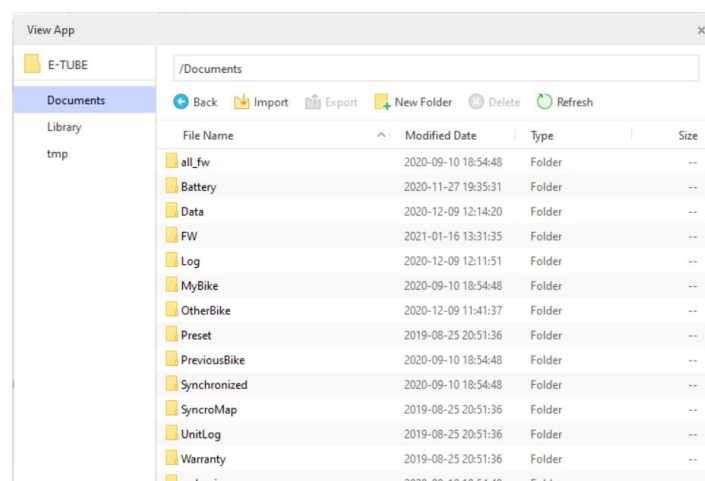
Now select the tab "Apps" in the left area (1):



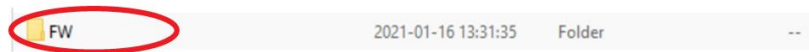
If necessary, use the vertical slider (2) on the right hand side until you have found the **E-Tube** app (3).
Now press the "View" button associated with the **E-Tube** app:



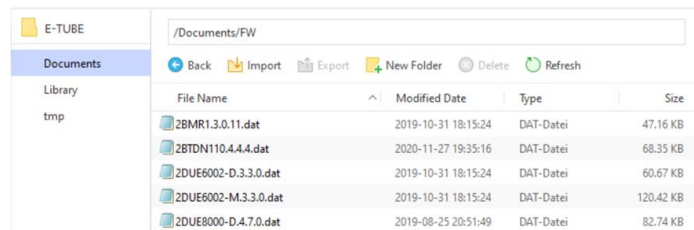
You now should see a view similar to the following picture:



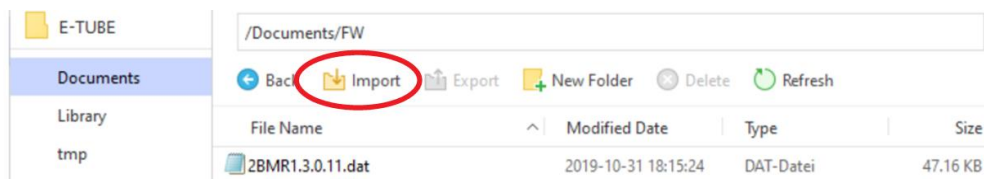
Double click on the "**FW**" folder:



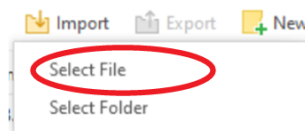
Now, the following view should appear:



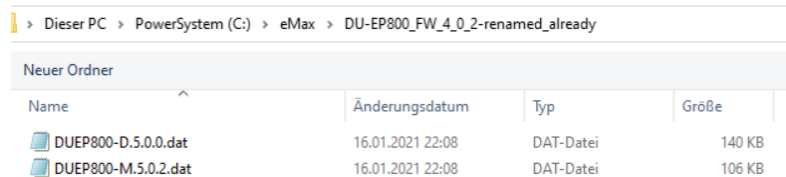
Now press the "**Import**" button:



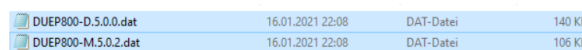
In the subsequent dialog, select "**Select File**":



Now navigate to the directory created in step 2 which contains the unpacked firmware files:



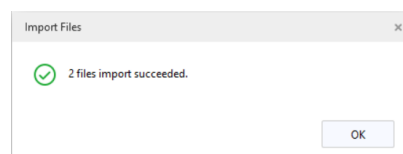
Select all files located in this directory (for example by pressing the "**CTRL**" and "**A**" keys simultaneously).
Hint: In general, you have to select 2 files, however for the DU-E8000 drive unit you need to select 4 files!
Done that, all files in this directory must have been marked with a blue background:



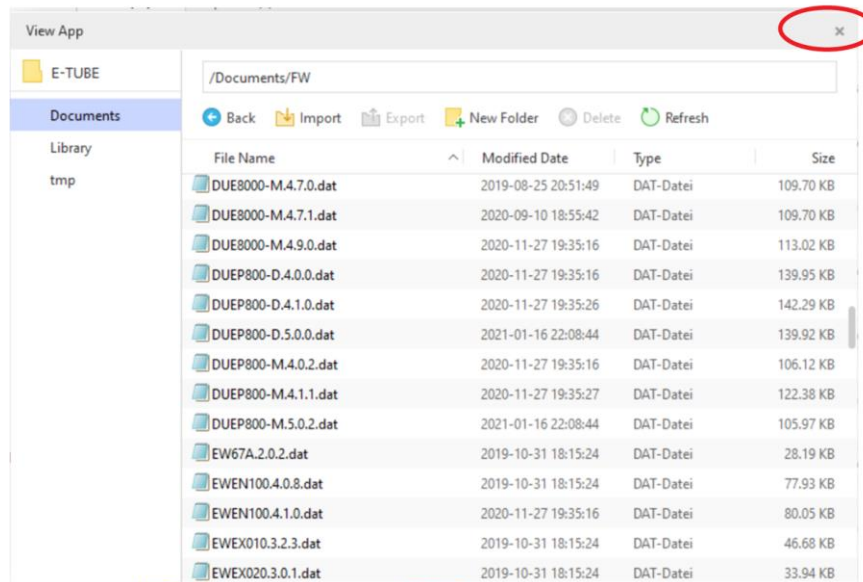
Now press the "**Open**" button:



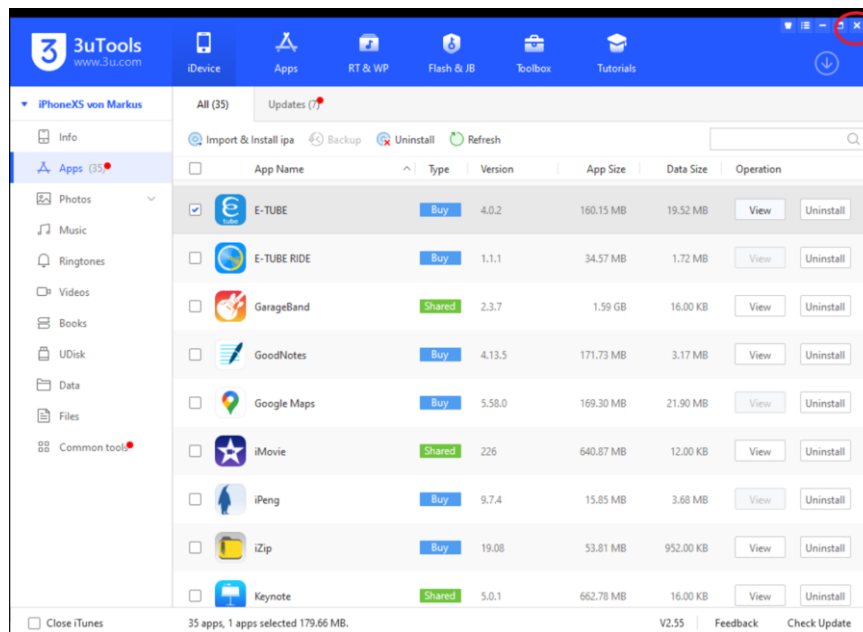
Confirm the following dialog with the "**OK**" button:



Now please close the current window by clicking the "x" symbol at the top right:



Now please close the **3uTools** program by clicking the "x" symbol at the top right:



👉 You now have successfully processed step 6 ...

Step 7 of 8: Update the firmware through the E-Tube app

Now invoke the **E-Tube** app. **E-Tube** now should indicate a new firmware for the drive unit.

In general, the “new” firmware has a version number which is exactly **1.0.0** above the intentional firmware version. So if you want to downgrade to motor firmware **4.0.2**, it is most likely that the E-Tube software will indicate a version **5.0.2**. This is the way how E-Tube will be tricked to update to an older firmware and so this situation is absolutely fine and correct.

Follow the instructions and use the **E-Tube** app to update the motor firmware of your STePS bike in the usual way.

Please take care:

Normally such a firmware update just takes several (normally 2-5) minutes.

However, it may happen that the E-Tube app will look like non-functional anymore because there is no action for several minutes in some situations. Please never interrupt the process in such a situation and bravely wait! We already had situations like this when E-Tube came back to life after nearly an hour with a perfect finished process.

If the **E-Tube** app will not indicate a newer firmware version for the drive unit like described before, please repower your smartphone to clear the smartphone memory thoroughly.

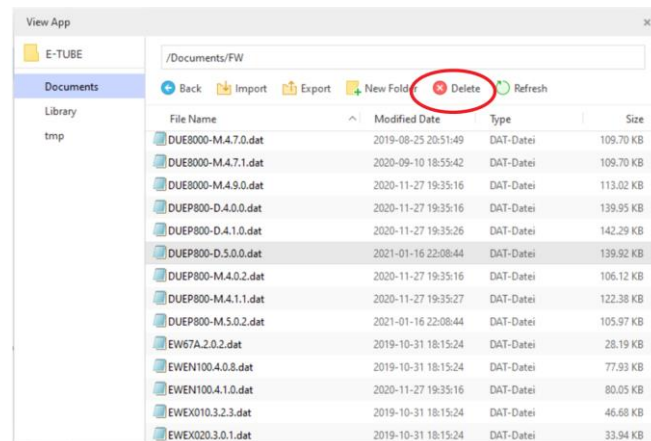
After the firmware update has been completed correctly, the **E-Tube** app should be closed again. Please repower your bike.



You now have successfully processed step 7 ...

Step 8 of 8: Remove the previously copied files and return to the default settings on the iOS device

Please start the **3UTools** program again and navigate as described in step 6 to the "**FW**" directory on your iOS device to which you have previously copied the firmware files:



Now mark each of the files copied into this directory in step 6 by clicking on the corresponding file and delete them individually using the "**Delete**" button. Please only delete the files copied before! Possibly simply check the exact file names again in the directory created in step 2.

The deletion of these subsequently added files is necessary so that you basically have the option at any time to update to any new firmware from Shimano that may appear in the future with the **E-Tube** app.

Please note that any further firmware update is usually not necessary and the advantages of the older firmware version that was consciously installed via this document may vanish then.

After this deletion you can now exit the **3UTools** program.

You now can reactivate WLAN and deactivate airplane mode in the settings of the iOS device.

If you like, you now also can delete the directory created in step 2 (in this document "**C:\eMax**").

If you haven't already done so, you now should switch the bike off and on again.



You now have successfully processed step 8 ...

Congratulations on the (hopefully) successful downgrade via Bluetooth!



Regarding Error messages (e.g. E035) on the bike display after processing the downgrade:

If there will be an error message (e.g. E035) shown on the bike display after the described downgrading process, then most probably there is a configuration setting which is not accepted by the now installed older original Shimano motor firmware causing this issue.

In many cases the settings for **chainring size** and **smallest rear sprocket size** (see on “special settings” in chapter 8 of [this document](#)) are causing this situation.

In this case please try to program the following values with **eMaxMobileApp** and repower the bike:

chainring size: 34 teeth

smallest rear sprocket size: 11 teeth

If you permanently want to stay on the downgraded motor firmware version, then you can use these values without any issue, because these values for chainring size and smallest rear sprocket size are not relevant in normal riding modes. These settings are only relevant for max. speed calculations in walk assist mode.

However, if you want to update back to the latest motor firmware after you have made your intended modifications with the downgrade motor firmware, then for sure you can reset these parameters back to the original (correct) settings after updating the motor firmware again.

Greetings and good luck,

Markus from the **eMax** team (info@eMax-Tuning.com)