Updating the QDAC firmware

The QDAC firmware is continuously improved, so every now and then new versions are available from QDevil. It is easy to update the firmware, just follow the instructions below.

Updating the firmware will not modify saved calibration parameters.

Update instructions

The firmware on the QDAC can be updated from a Windows PC, a Linux computer or a MAC OS computer. Please unzip the delivered archive and copy the appropriate file to an appropriate folder on your computer. Note that the version number may differ from "1.05" which is shown in this document:

Windows	firmwareUpdaterWin_V_1.05.exe
Linux	firmwareUpdaterLin_V_1.05
Mac	firmwareUpdaterMac_V_1.05

Next, connect the QDAC to the computer with the usb cable, and power the QDAC up.

Open a command prompt / terminal on the computer and change directory to the folder where the firmware updater file is located and execute the file. See blow on detailed instructions on how to do this on the three different operating systems.

The firmware updater will start by listing USB devices connected to the computer, and you will have to select which one is the QDAC to be updated.

> If you are in doubt which usb device is the QDAC, press "q" + <enter> to quit. Then unplug the QDAC usb cable and run the firmware updater program again to discover which usb device is gone. Then quit again, re-plug the QDAC usb cable, and run the updater a third time…

Thereafter the update process starts. The updater program may find it necessary that you restart the QDAC. If so, please switch the QDAC off, wait a couple of seconds and switch it back on. Within 10 seconds after the LED lights up (which may last up to 3 seconds after power is switched on) press <enter>.

Windows

Open a Command Prompt and change directory (use the `cd` command) to the folder where the firmware updater file is located. Then simply execute the file and follow the instructions.

```
firmwareUpdaterWin_V_1.05.exe
```

Mac / Linux

Open a Terminal window and change directory (use the `cd` command) to the folder where the firmware updater file is located. Then change the attributes of the firmware updater file so that it is recognized as an executable:

```
chmod +x firmwareUpdaterMac_V_1.05
```

Now execute the file by entering the following in the command prompt, do not forget the "./" in front of the filename:

```
./firmwareUpdaterMac_V_1.05
```

Expected response

This is the response (on a MAC) when restart is not required.

```
$./ firmwareUpdaterMac_V_1.05
Please select the serial port to which the QDAC is connected and hit <enter>:
1) /dev/cu.Bluetooth-Incoming-Port
2) /dev/cu.usbserial-FTA6345L
3) /dev/cu.usbserial-FTA631W5
```

```
q) To quit
(1....q):2
Connected to port: /dev/cu.usbserial-FTA6345L
Get version
Software Version: 1.04
Go to bootloader
Get bootloader version
Bootloader version: 01
Hex filename: NBI_MZ.X.production_V_1.05.hex
Erasing..
Erased
Uploading
.........................................
Transmitted: 4364 packets (118089 bytes), Received: 4364 packets (30548 bytes)
Verifying..
CRC @9d000000[000000ff]: 042c4f6026
Run application
Get version
Software Version: 1.05
$
```

If restart is required, the response will look like this

```
$./firmwareUpdaterMac_V_1.05
Please select the serial port to which the QDAC is connected and hit <enter>:
1) /dev/cu.Bluetooth-Incoming-Port
2) /dev/cu.usbserial-FTA6345L
3) /dev/cu.usbserial-FTA631W5
q) To quit
(1....q):2
Connected to port: /dev/cu.usbserial-FTA6345L
Get version
Software Version: 1.04
Go to bootloader
Could not connect to the QDAC. The QDAC needs to be rebooted to proceed. Please
turn off the power to the QDAC and then turn it back on, after that press <enter>
within 10 seconds (or press q +. <enter> to quit):
Force enter bootloader
Get bootloader version
Bootloader version: 01
Hex filename: NBI_MZ.X.production_V_1.05.hex
Erasing..
Erased
Uploading
.........................................
Transmitted: 4364 packets (118089 bytes), Received: 4364 packets (30548 bytes)
Verifying..
CRC @9d000000[000000ff]: 042c4f6026
Run application
Get version
Software Version: 1.05
$
```