

FIRMWARE UPDATE FREEDSP-AURORA

REVISION HISTORY

Revision	Description	Date
v1.0.0	Initial Version	09 Feb 2020
v1.1.0	Added webOTA	26 Feb 2020
v2.1.0	Added hint for preset export	20 Jul 20

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IMPORTANT INFORMATION

The freeDSP-aurora board might generate signals that may damage your audio equipment. Please read and understand this manual before starting to work with your board. Adjust all hardware settings and configure your software before connecting any audio equipment to freeDSP-aurora. Always start with low volume on your amplifier and slowly increase the level to reduce the risk of damaging your audio system.

Especially the installation of alpha and beta versions can lead to incorrect behavior. The installation is at your own risk.

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Please keep in mind that freeDSP-aurora is an open-source project. Because freeDSP-aurora is very flexible, many applications are possible. Questions and new ideas can be discussed online with other DIYers. Please use the *Digital Line Level* subforum @ diyAudio.com or the *auverdion* subforum @ www.diy-hifi-forum.eu to connect with other people working with freeDSP-aurora. Please create individual threads for your topics only if you cannot find your issue in the existing threads. Some questions can be answered by carefully reading this manual.

UPDATING THE FIRMWARE VIA USB

This chapter guides you through all the steps to perform a firmware update via an USB connection. The update itself will be done by a script.

PREPARING FOR UPDATE

For updating the firmware you need an USB2Serial module based on a FTx232 or CP2102N module, e.g.

https://www.ftdichip.com/Products/Modules/DevelopmentModules.htm#FT2232H_Mini or similar. Please make sure that your module works with a voltage of +3.3V. Modules with +5V voltage can damage your freeDSP-Aurora.

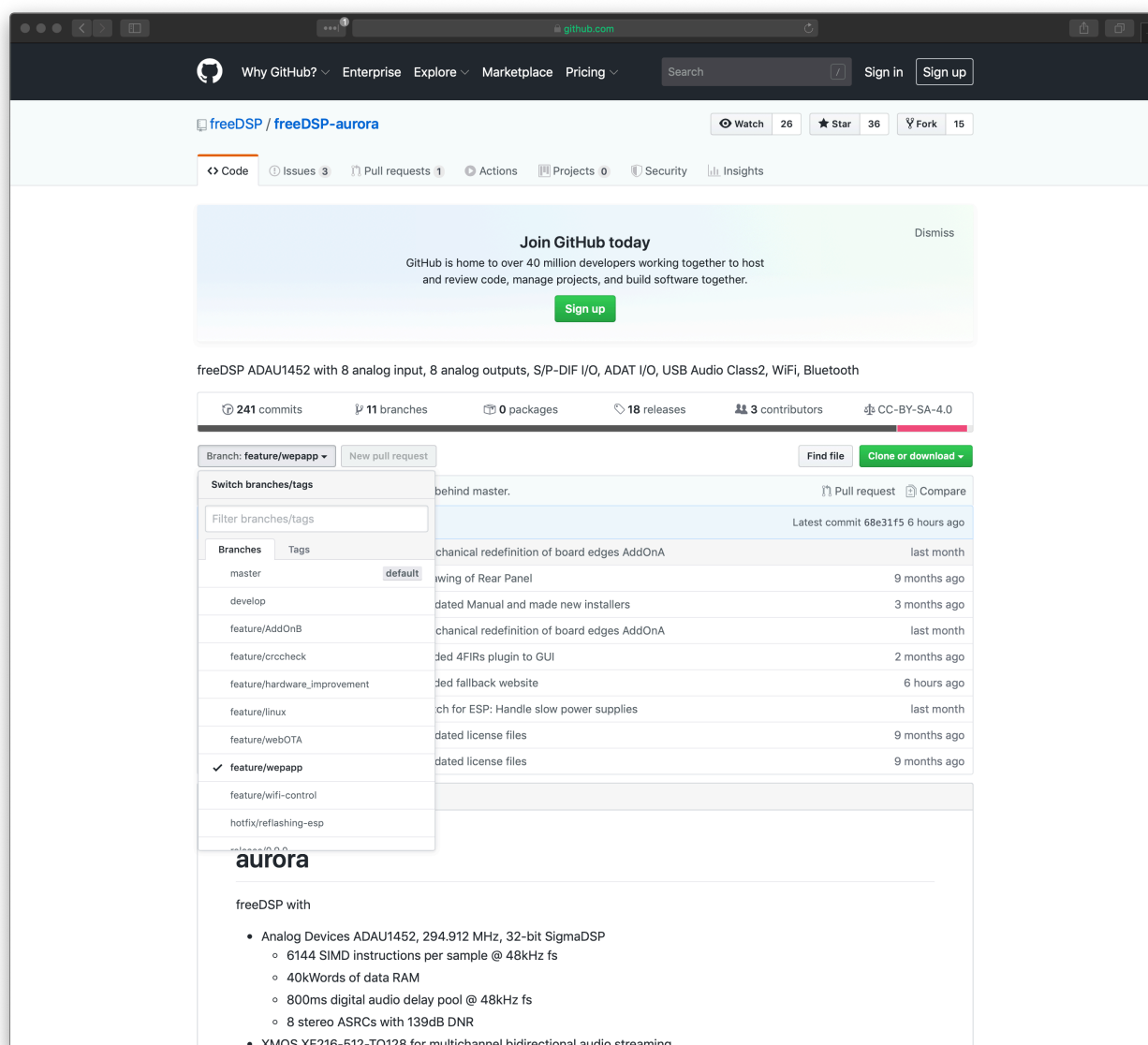
You may need to install a driver for your USB2Serial module. Please read the manual of your module.

If you are updating from version 2.x.x please export your presets first and import them after the update again.

UPLOADING THE FIRMWARE

For uploading a new firmware to your freeDSP-aurora do the following steps:

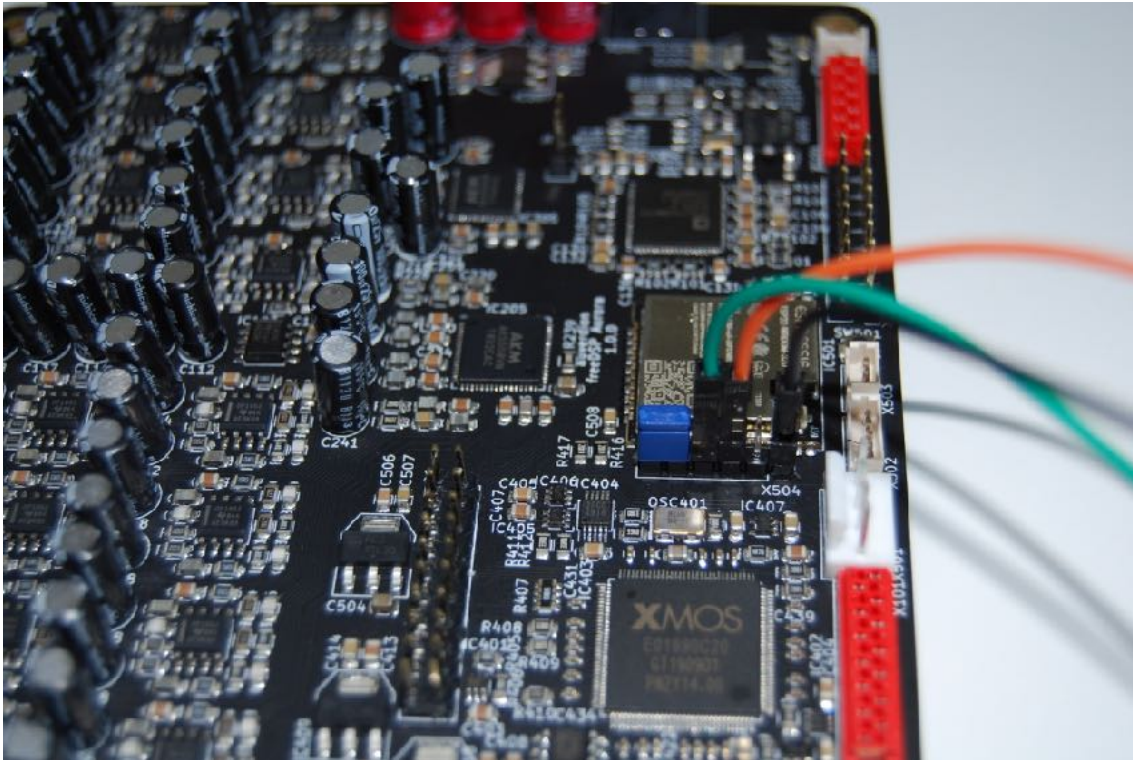
1. Download the latest release from github: <https://github.com/freeDSP/freeDSP-aurora>
If you want to install a alpha or beta version (preview versions) instead you may have to switch to the right feature branch by selecting it in the branch drop down menu, e.g. feature/develop. Then click on *Clone or download* and select *Download ZIP*.



2. Unzip the downloaded zip file (if your computer does not do this by itself).
3. Power off your freeDSP-aurora module.

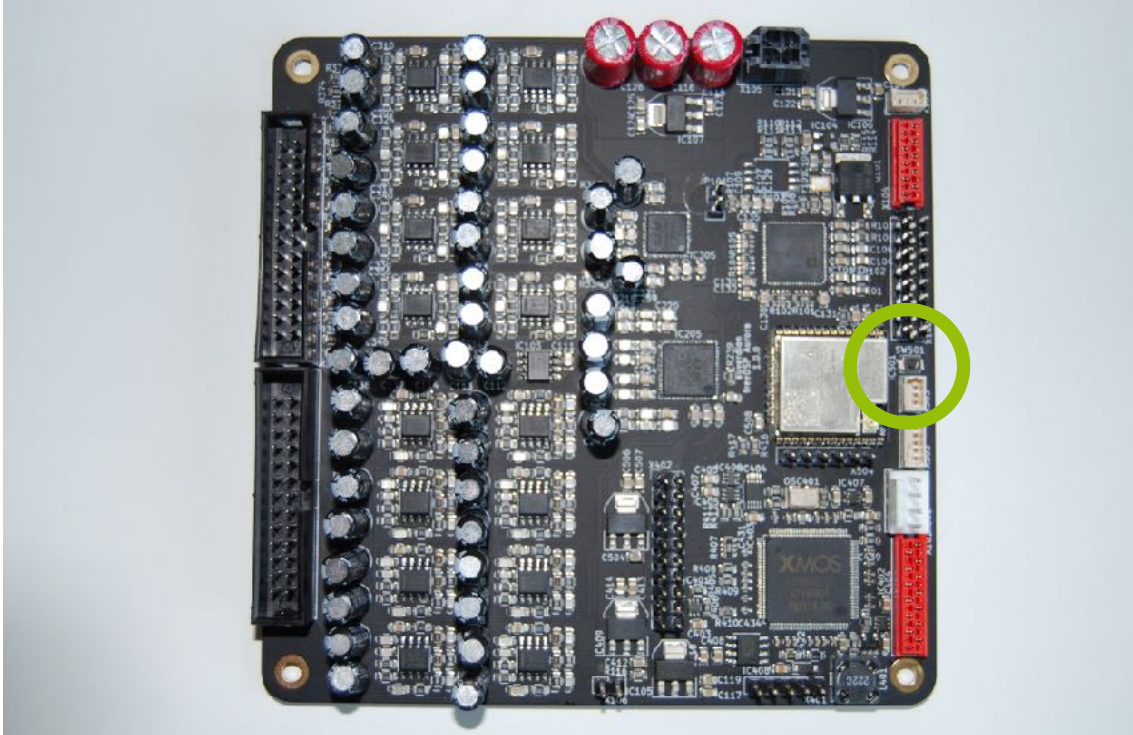
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7. Connect RXD of your USB2Serial module with pin 3 of X504.



8. Connect your USB2Serial module with your computer.
9. Power up your freeDSP-aurora.
10. Open a terminal (command prompt) and change to script directory by entering
`cd <path_to_repository>/SOURCES/WEBAPP/ESP32/updater`
11. On macOS you may have to make the update script executable by entering
`chmod +x update.sh`
12. Under macOS start the update scrip by `./update.sh <your_com_port>`.
 Replace `<your_com_port>` by the name of your USB2Serial module, e.g.
`/dev/cu.usbserial-FTRXGG930`.
13. Under Windows start the update scrip by `update.bat <your_com_port>`.
 Replace `<your_com_port>` by the name of your USB2Serial module, e.g. `COM3`.

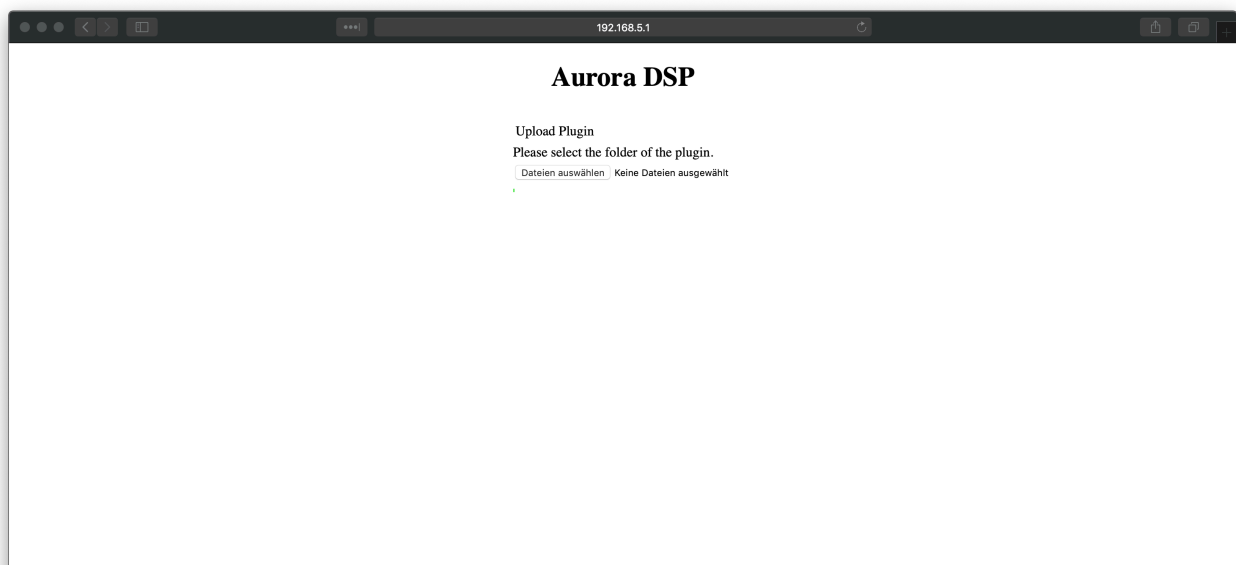
14. Now follow the instructions on your screen. The update script will ask you twice to briefly press and release the SW501 button. You can find this button here:



15. After a successful update remove the jumper from X504 and turn your freeDSP-Aurora off and on.

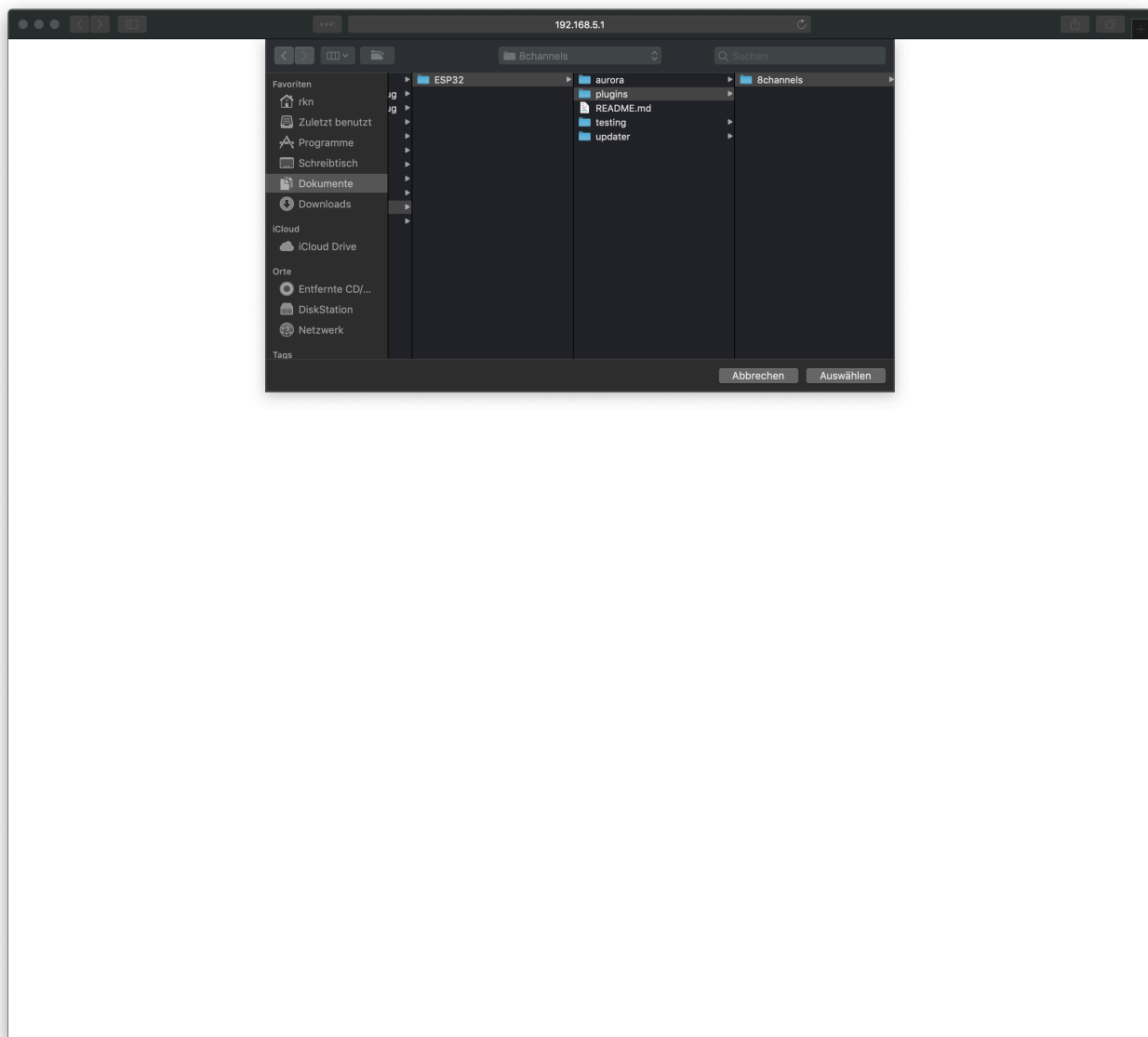
16. Connect your computer with the Access Point AP-freeDSP-aurora.

17. Open a web browser and enter the IP 192.168.5.1



18. Click now on Select files and select the directory of the plugin you want to install.

Important: You have to select the directory name not any file inside this directory. You will find the plugins here: `<path_to_repository>/SOURCES/WEBAPP/plugins`



19. Your selected plugin will now be installed.

20. After successful installation restart your freeDSP-Aurora, reconnect to access point AP-freeDSP-aurora and in your web browser type in the address 192.168.5.1. You will see now the web interface of your selected plugin. You can now start to configure freeDSP-Aurora for your application.

UPDATING THE FIRMWARE VIA WEBOTA

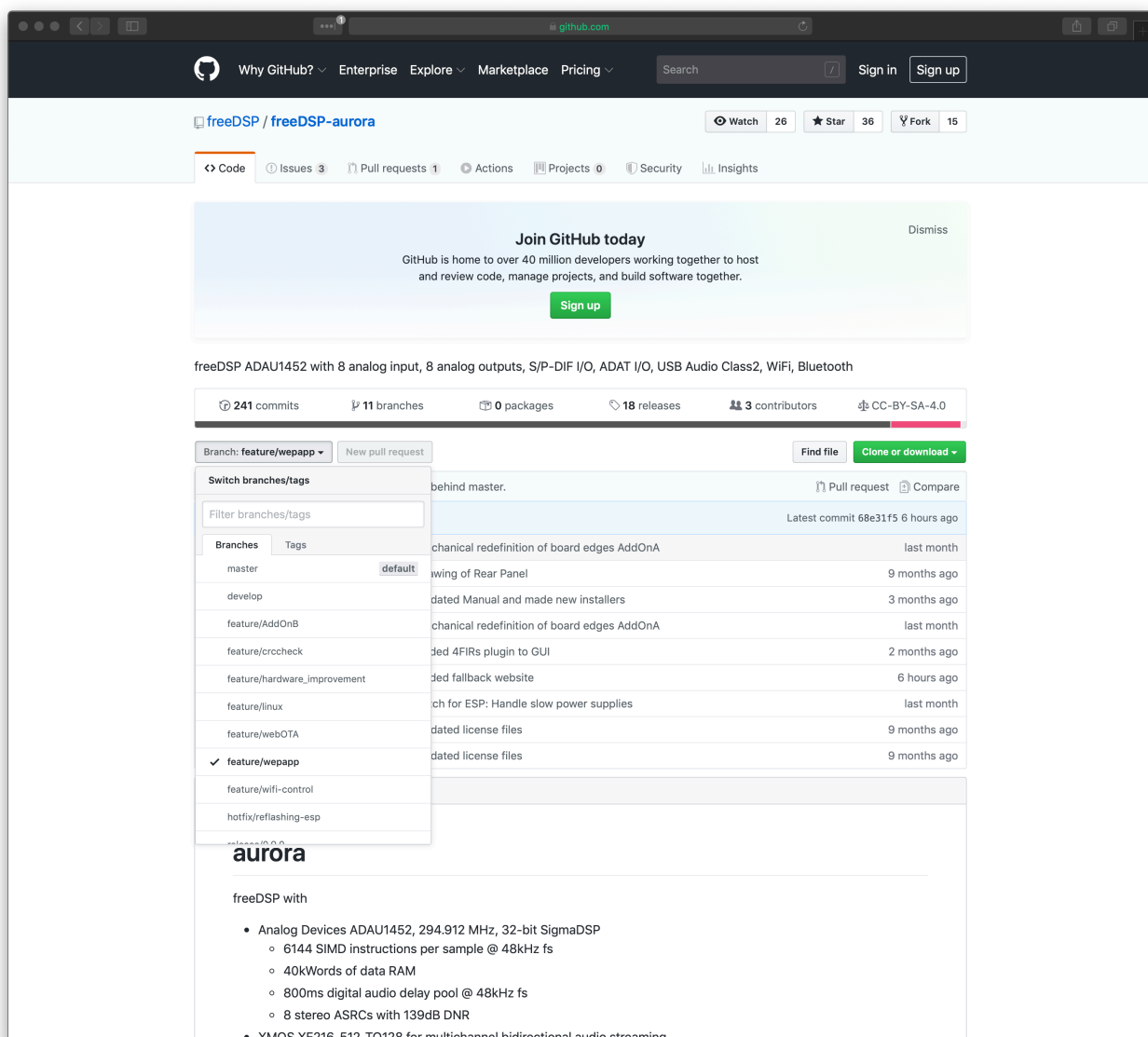
Besides the update via USB you can update the firmware of your freeDSP-aurora wireless by webOTA. This chapter guides you through all the steps to perform a firmware update. No additional software is required.

If you are updating from version 2.x.x please export your presets first and import them after the update again.

UPLOADING THE FIRMWARE

For uploading a new firmware to your freeDSP-aurora do the following steps:

1. Download the latest release from github: <https://github.com/freeDSP/freeDSP-aurora>
If you want to install a alpha or beta version (preview versions) instead you may have



freeDSP ADAU1452 with 8 analog input, 8 analog outputs, S/P-DIF I/O, ADAT I/O, USB Audio Class2, WiFi, Bluetooth

241 commits 11 branches 0 packages 18 releases 3 contributors CC-BY-SA-4.0

Branch: feature/wepapp New pull request Find file Clone or download

Switch branches/tags

Filter branches/tags

Branches	Tags
master	default
develop	
feature/AddOnB	
feature/crccheck	
feature/hardware_improvement	
feature/linux	
feature/webOTA	
✓ feature/wepapp	
feature/wifi-control	
hotfix/reflashing-esp	

aurora

freeDSP with

- Analog Devices ADAU1452, 294.912 MHz, 32-bit SigmaDSP
 - 6144 SIMD instructions per sample @ 48kHz fs
 - 40kWords of data RAM
 - 800ms digital audio delay pool @ 48kHz fs
 - 8 stereo ASRCs with 139dB DNR
- XMOS XE216-512-TQ128 for multichannel bidirectional audio streaming

to switch to the right feature branch by selecting it in the branch drop down menu, e.g. feature/develop. Then click on *Clone or download* and select *Download ZIP*.

2. Unzip the downloaded zip file (if your computer does not do this by itself).
3. Connect you computer with the WiFi access point *AP-freeDSP-aurora*.
4. Open web browser and type in the URL <http://192.168.5.1/webota>
5. Alternatively you can connect you computer to the same local WiFi network your freeDSP-aurora is connected to and replace the ip 192.168.5.1 by the ip your board got from your router.
6. Click on the button to select the firmware binary from your hard disk. The filename of the firmware is usually **aurora.ino.esp32.bin**. You can find the latest binary in `<path_to_repository>/SOURCES/WEBAPP/ESP32/updater`
7. Once you have selected a file the update process starts. The new binary will now be uploaded to your board. After a successful update you will see a message box and afterwards your freeDSP-aurora board will restart.
8. Connect to the Access Point AP-freeDSP-aurora and enter <http://192.168.5.1/fallback> in the URL field of your browser.
9. Reinstall your plugin now.
10. Your freeDSP-aurora is updated now.

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