

## Installing STM32CubeIDE in Linux Mint 21.1 and in Windows 10, and compiling and uploading the STM32F411 USB Audio DAC firmware.

Download STM32CubeIDE for Debian from here: <https://www.st.com/en/development-tools/stm32cubeide.html> - register or confirm with and email) – the file is named:  
en.st-stm32cubeide\_1.11.2\_14494\_20230119\_0724.unsigned\_amd64.deb\_bundle.sh.zip

Extract the file in the Download folder, open a terminal and make it executable then run it:

```
sudo chmod +x ***.sh  
sudo ./***.sh
```

Ignore the message about the sandbox etc., and reboot for the new udev rules to take effect.

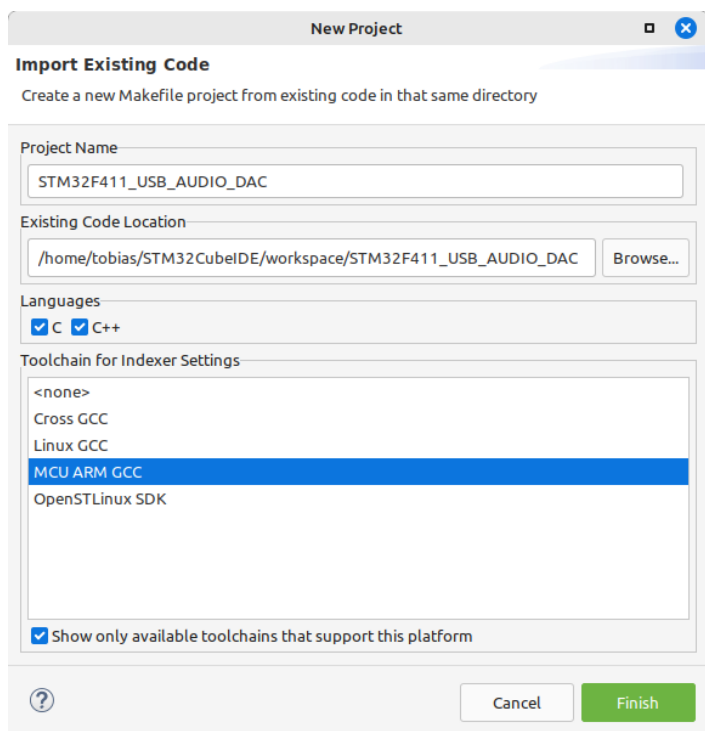
Then run STM32CubeIDE and select a default workspace such as /home/user/STM32CubeIDE/workspace/, and then select File -> New -> STM32Project. Wait a few minutes until the message about a target selector appears then select your STM32 MCU - in this case type STM32F411CEU6 in the top lefthand box then select it in the bottom table and press Next.

Wait until the STM32F411 definition files (and any updates) have been downloaded and installed.

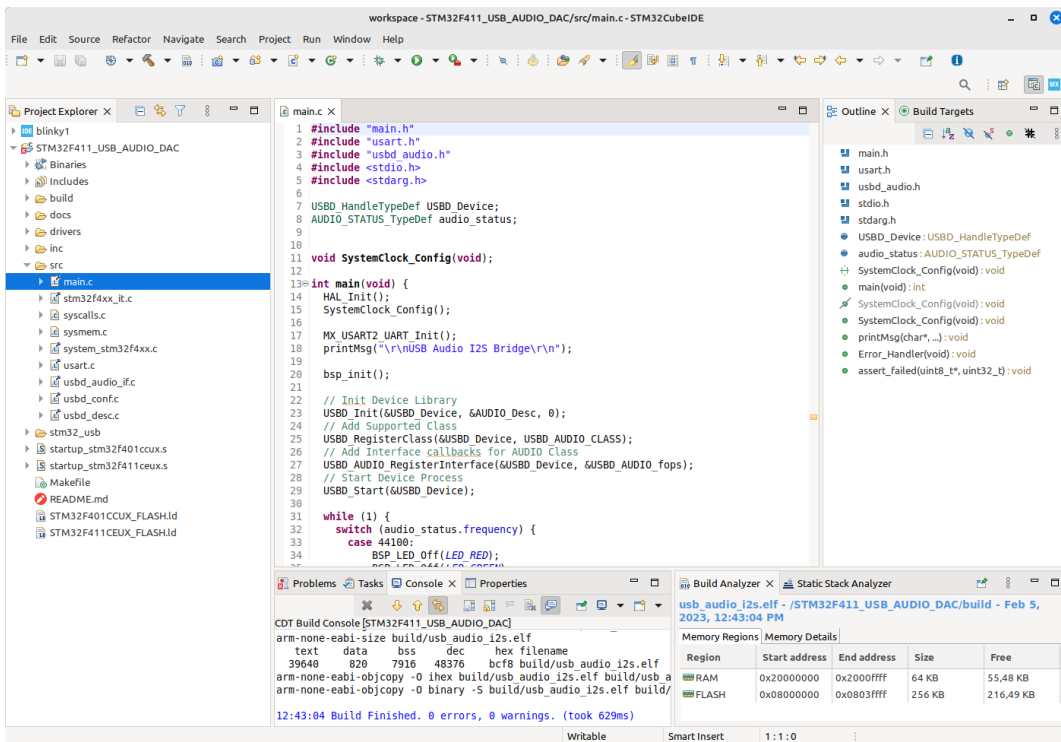
You can then follow the instructions <https://community.st.com/s/question/0D53W00000HNRsSAL/how-to-install-stm32cubeide-on-ubuntu> further for doing a quick blinky test, or just cancel the project and start with the new USB Audio DAC project below. Remember to connect the MCU and the ST-Link-USB adapter to the PC.

Download the zip file from here [https://github.com/har-in-air/STM32F411\\_USB\\_AUDIO\\_DAC](https://github.com/har-in-air/STM32F411_USB_AUDIO_DAC) and extract it in /home/user/STM32CubeIDE/workspace/. Then remove the -main part of the extracted folder and open CubeIDE.

Choose File -> New -> Makefile Project with Existing Code, browse to the STM32F411\_USB\_AUDIO\_DAC folder and select it. Choose MCU Arm GCC – see below, and press Finish:

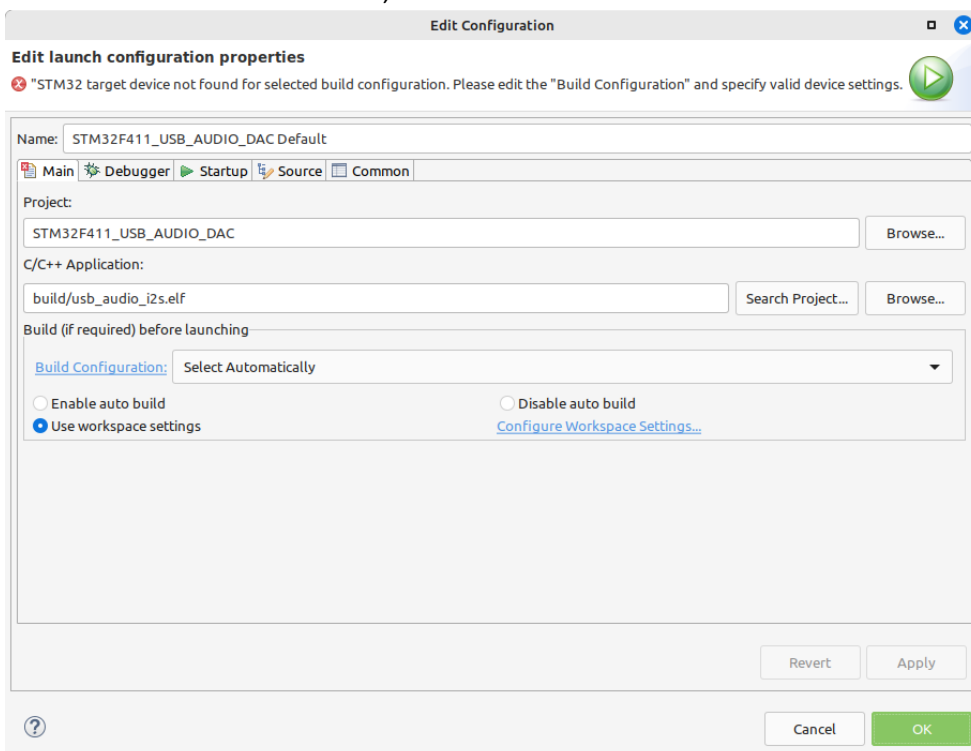


Open the Makefile and comment out the STM32F401 section and uncomment the STM32F411 section (3 lines each), and save the makefile. Then press Project -> Build Project - it should complete the build - see below:

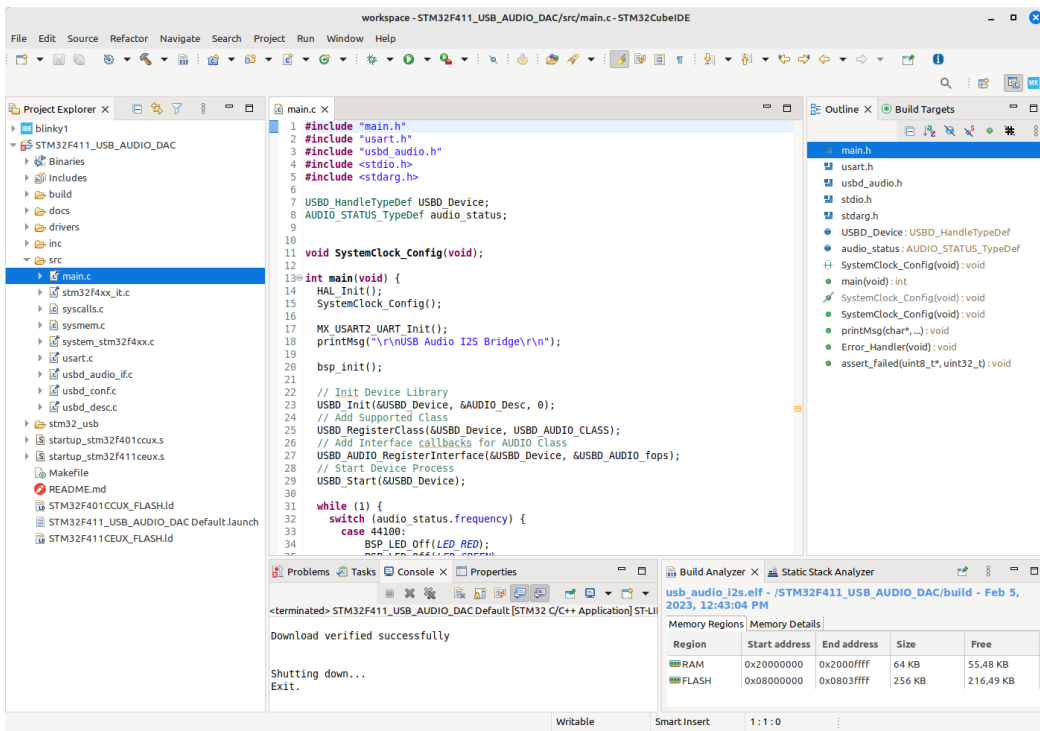


You can check in the build subfolder for the binaries files .bin and .hex – which you can use to program the MCU using STM32CubeProgrammer or continue to use the IDE to upload the code.

Press the Run button see below, then OK:



Then it will complete the upload:



You can now close the IDE, unplug the ST-Link and plug the STM32F411 in with its own USB adapter – it should show up as a new USB Audio device using aplay -L

For windows 10 install the CubeIDE using the exe file and extract the Github files under the windows assigned workspace. Then follow the same instructions as for Linux above.