



How to flash the Caribou Bootloader?

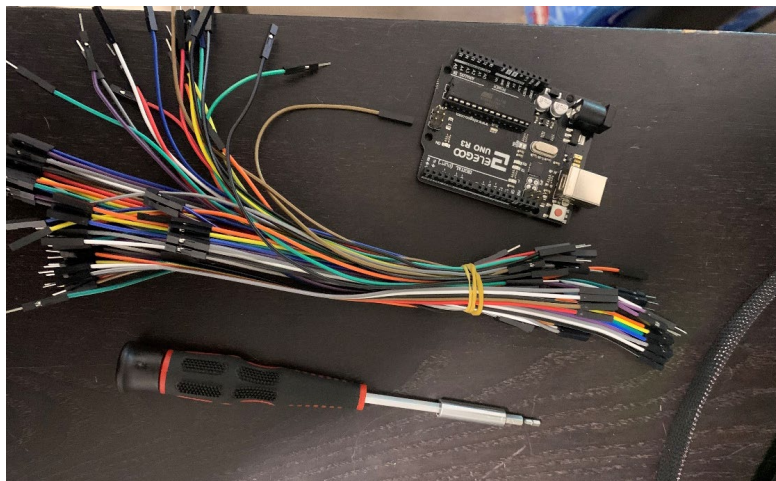
Attention! All steps shown here are to be carried out at your own risk and we do not accept any liability for damage to the board.

Note: When flashing, all set values (live-z, PID tuning, etc) are lost and the printer must be recalibrated afterwards.

1 TOOLS AND EQUIPMENT

Needed:

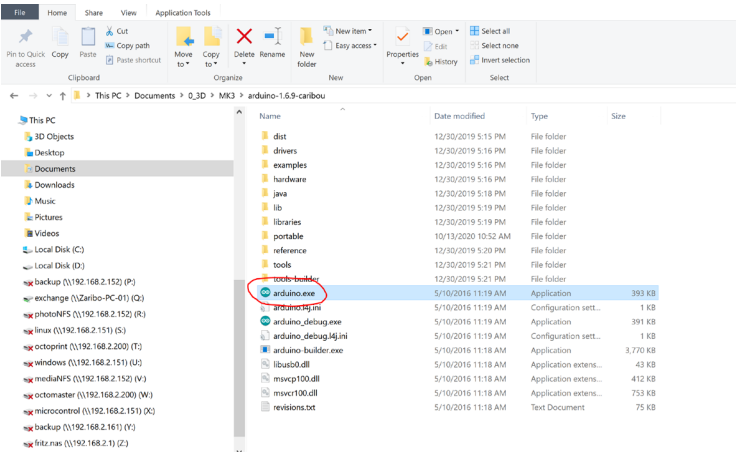
- Arduino Uno
- Jumper Cables (6x male / female, 15cm lang)
- USB -Cable (Arduino Uno)
- Screw driver for the Einsy box
- Computer / Laptop
- Some patience
- Prepared Arduino IDE <https://caribou3d.com/de/content/10-caribou-firmware>
- Caribou Firmware <https://caribou3d.com/de/content/10-caribou-firmware>



2 PREPARE ARDUINO UNO

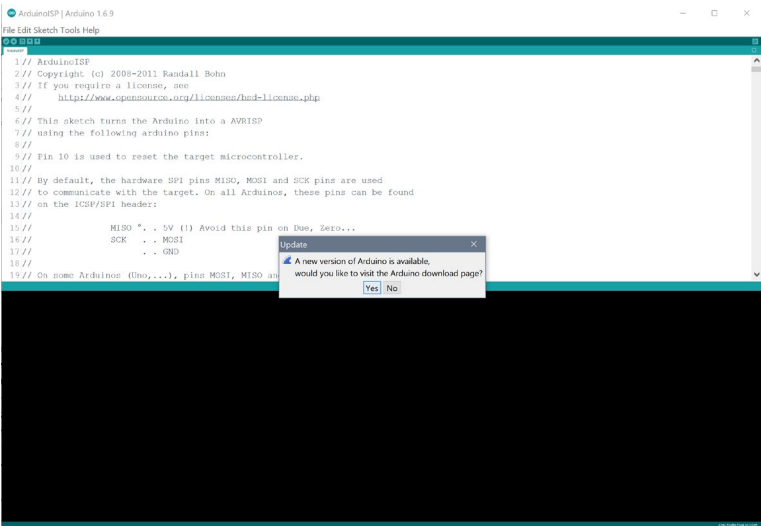
This step is to flash the Arduino to be able to use it as an ISP programmer.

The instructions refer exclusively to the Arduino Uno!



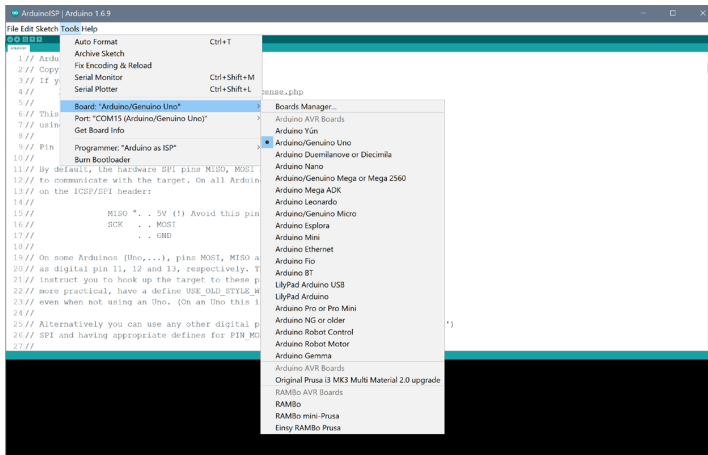
The file "arduino-1.6.9-caribou.zip" is unpacked into a directory.

Change into the directory and start the file "arduino.exe" with a double click

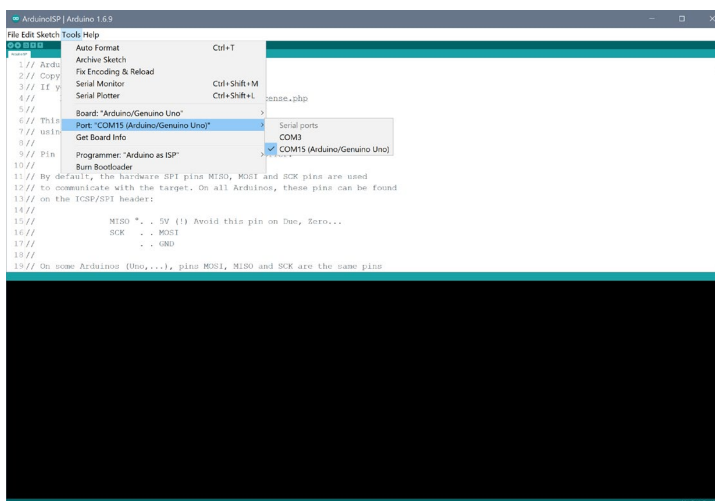


Click on "NO", DO NOT perform an update!

The Arduino is preconfigured and must not be modified.

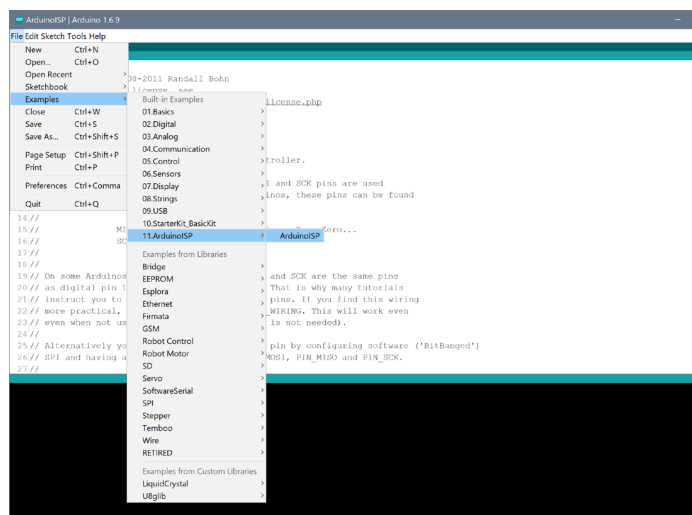


Under Tools select the board "Arduino / Genuino Uno"

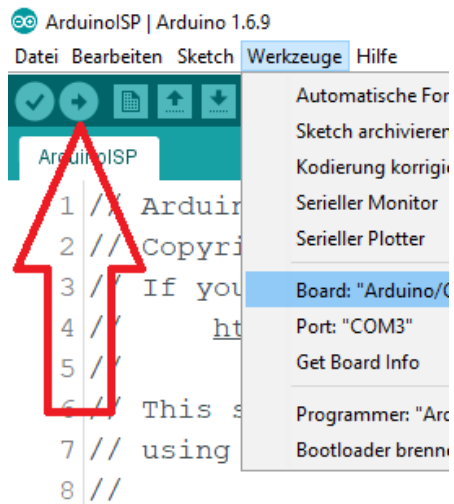


Connect your Arduino Uno with the USB cable.

Make sure that the Arduino is correctly recognised by checking if a COM port is detected. (COM15 in the picture shown).



Now open the file ArduinoISP.



Use this button to compile the sketch and then immediately flash it to the Arduino.

The lower part of the program (console) should now show that the flashing was successful.

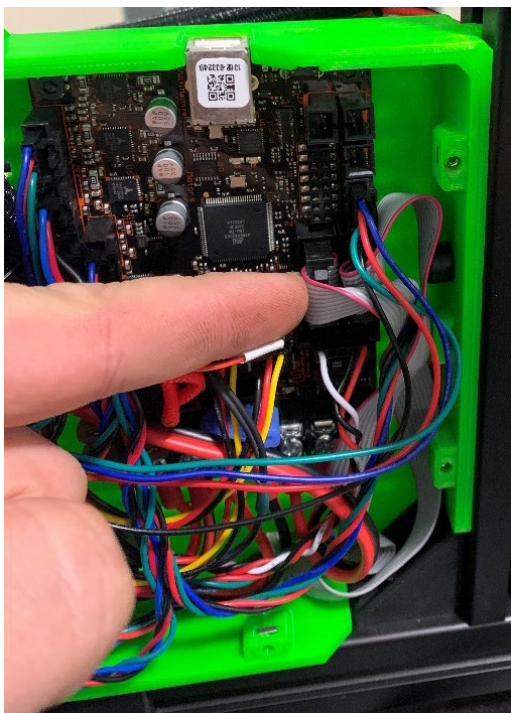
3 FLASH THE EINSY BOARD



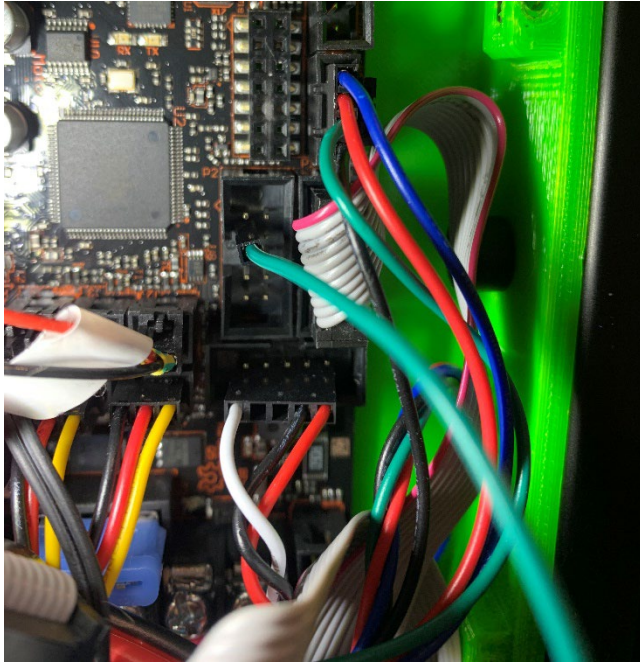
Disconnect the mains plug of the printer before the next step!

First loosen the screws of the lid and remove the lid.

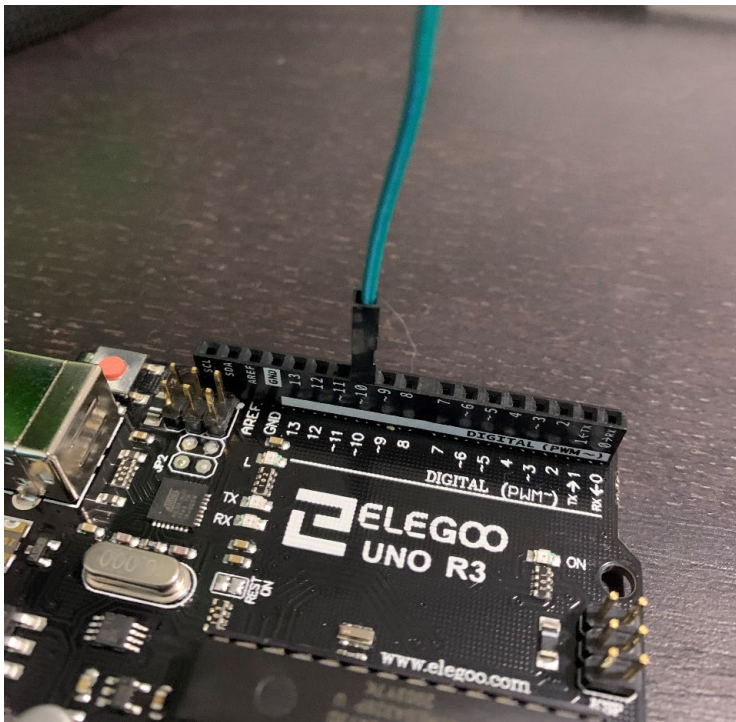
Now connect a total of 6 cables between the Einsy board and the Arduino board.



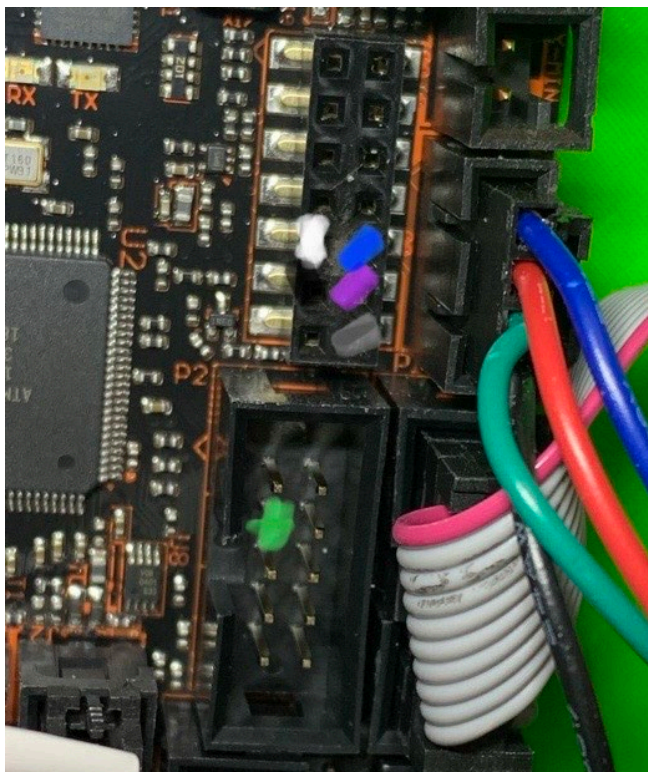
Remove the left display cable.



Connect a cable to the second pin in the left row.



On the Arduino, the cable is now plugged into connector 10.



Overview Einsky board:

The following 5 cables are connected on the side of the Einsky board as shown on the left.



Overview Arduino Board:

The following 5 cables are connected on the side of the Arduino board as shown on the left.



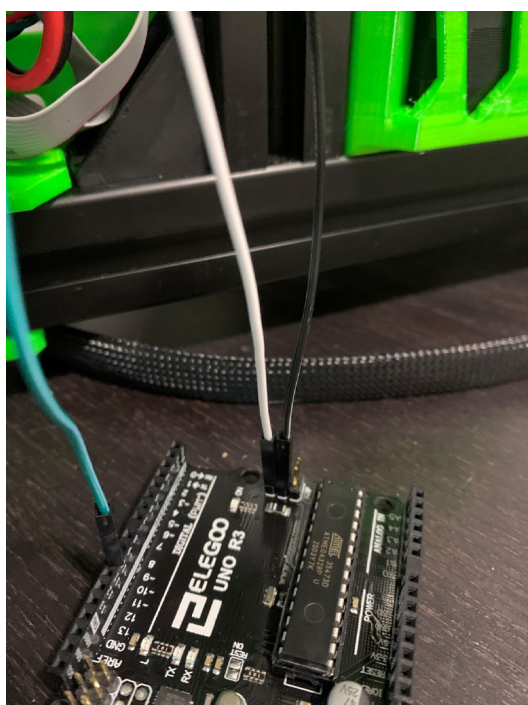
Cable 2 Einsy board.



Cable 2 Arduino board.



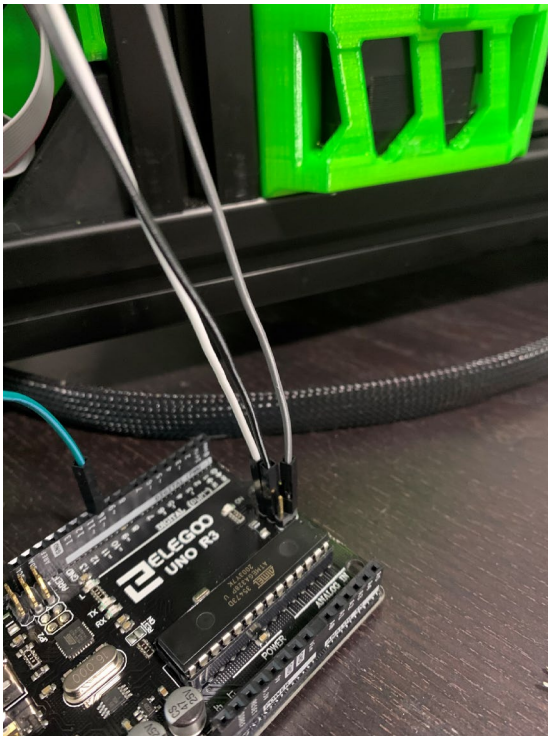
Cable 3 Einsy board.



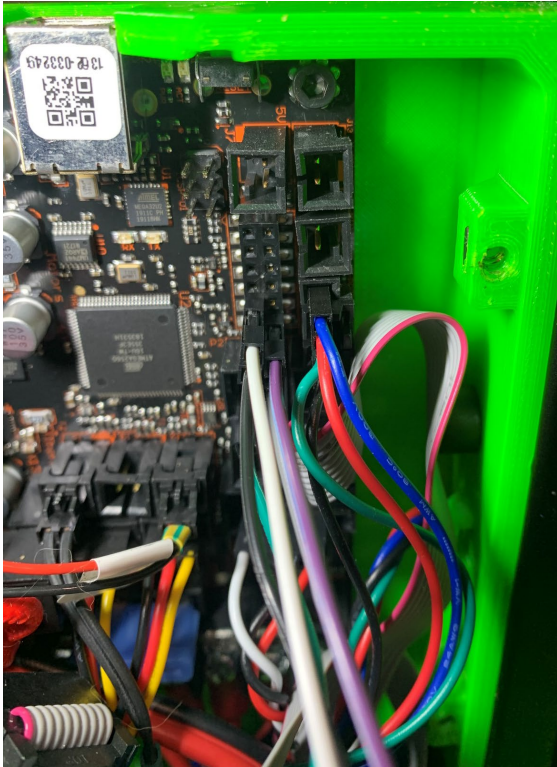
Cable 3 Arduino board.



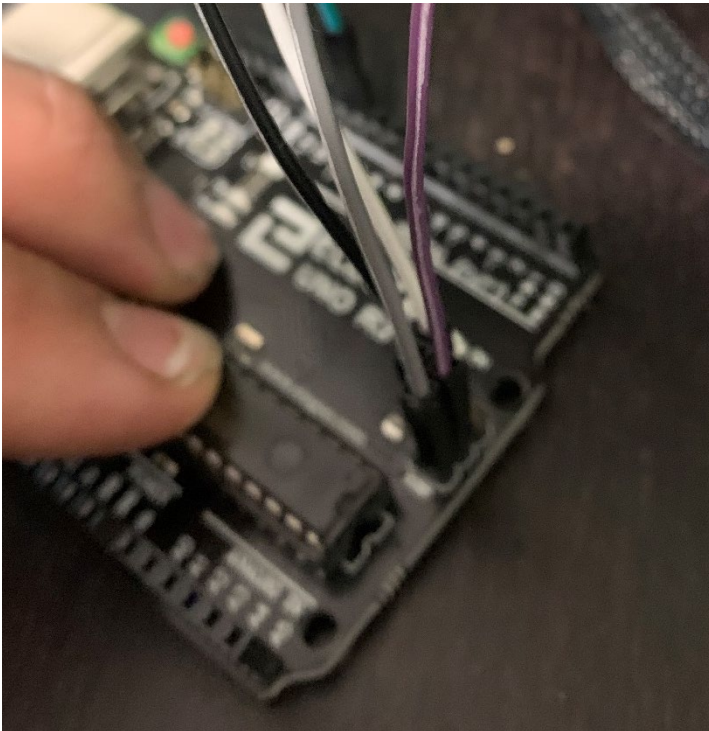
Cable 4 Einsy board.



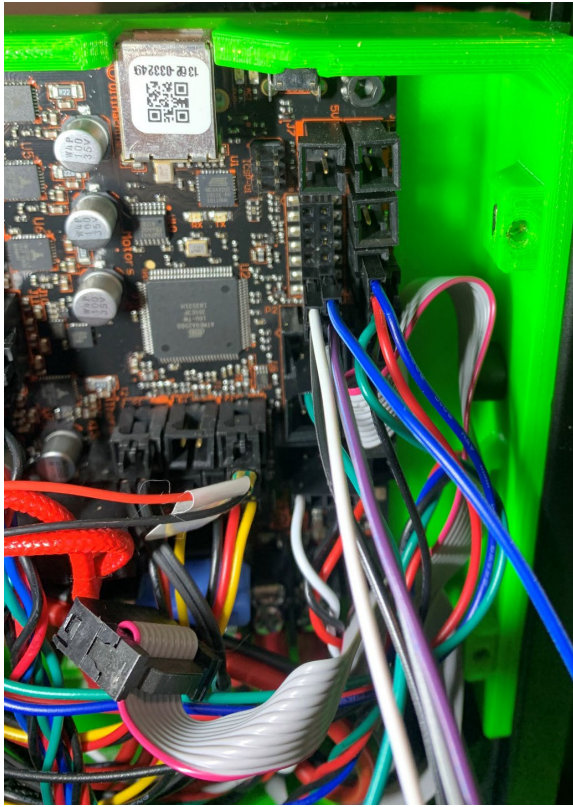
Cable 4 Arduino board..



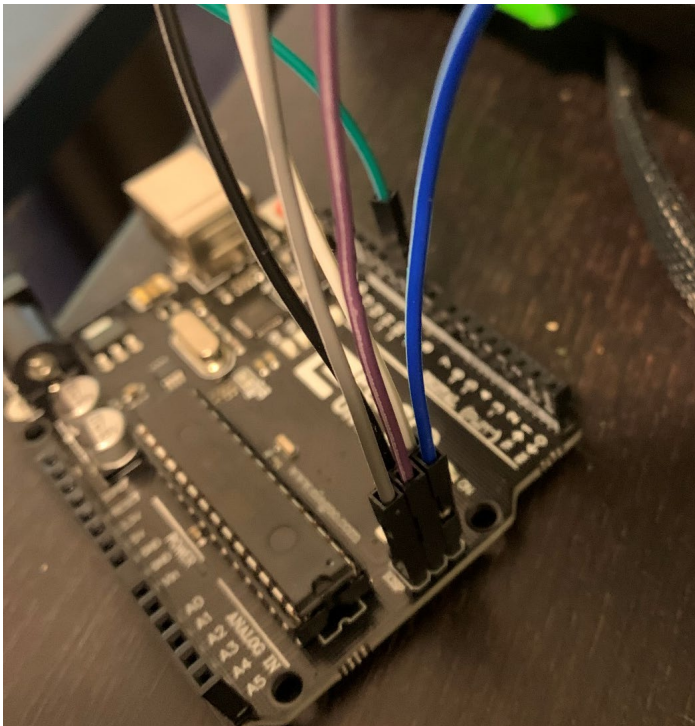
Cable 5 Einsy board.



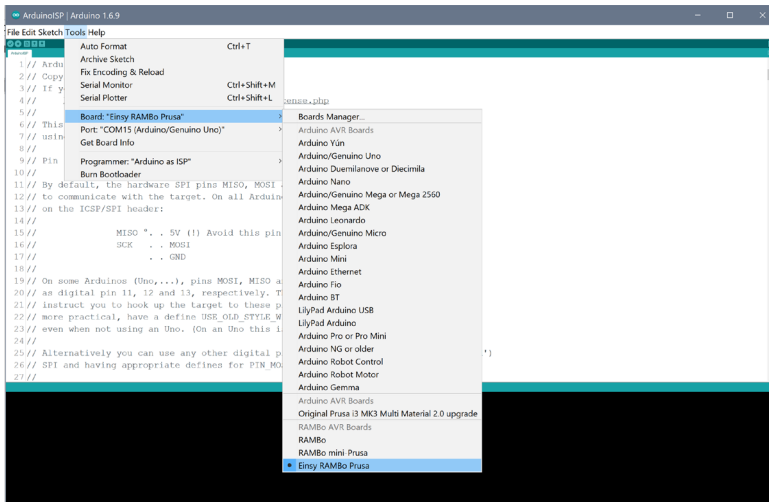
Cable 5 Arduino board.



Cable 6 Einsky board.



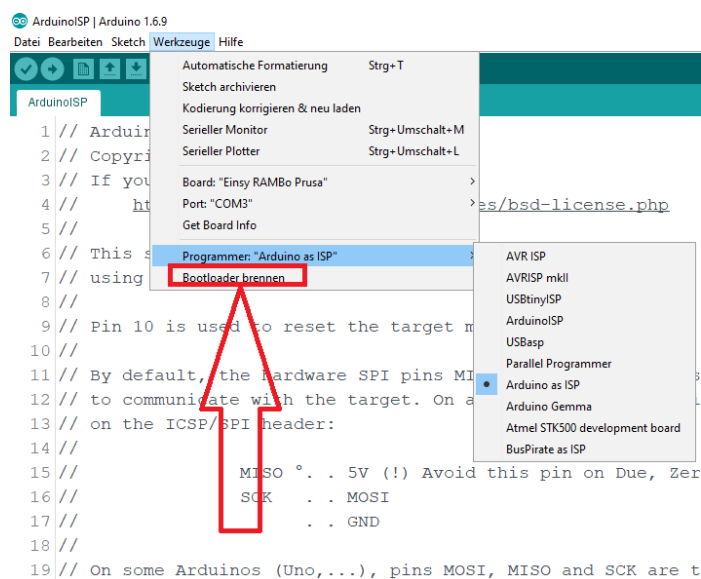
Cable 6 Arduino board.



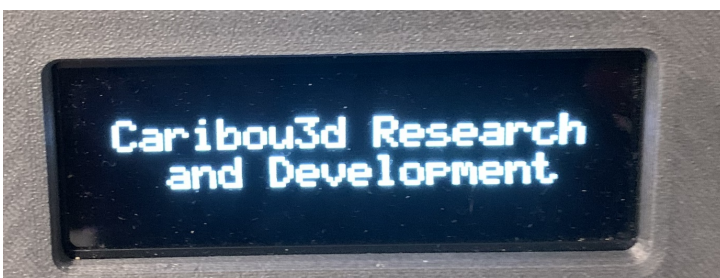
Now check the cabling at least twice.

Incorrect cabling can damage the boards.

Now in the Arduino IDE the board is changed to "Einsy RAMBO board."



With the option "burn / flash bootloader" the bootloader is now transferred to the Einsy board.



Your printer's display will now show the following

Congratulations, the boot-loader is flashed now.

Remove all cables and put the display cable back in place.

The firmware is lost when flashing the bootloader and must now be flashed as usual.

4 CREDITS

The document was prepared by Daniel Heimbeck and Wolfgang Schadow.

Lino Nardandrea played a major role in the creation of the bootloader and the portable Arduino IDE version.

For the cabling, the following site was helpful: <https://github.com/prusa3d/Prusa-Firmware/issues/910>, especially the photos by Luca Béla Palkovics.

We are grateful for reviews and input from Bernd Brinkert, Patrick Vosschans, Freed Gussner, Thomas Kroll, Luca Nelius.