Compiling and flashing

Tobias Tefke[1], **Prof. Ralf C. Staudemeyer**[1]

[1] *Schmalkalden University of Applied Sciences, Schmalkalden, Germany*

October 9, 2025

1 Compiling the code

Before being able compile code or to flash the compiled code, you have to set up your toolchain. Please refer to the 'Toolchain installation' document if you did not install the toolchain yet. Do not forget to activate the virtual python environment.

To compile the code, start a terminal in the directory of your project (or start a terminal and change the directory to your project's directory afterwards). Then start the compilation process as follows:

```
./genromap
```

In the case of build errors, please refer to the 'Common toolchain errors' document. Here you find instructions on how to fix the most often occurring errors. If your code compiled correctly, you can continue with the next section.

2 Flashing the compiled code

To flash the compiled output, the process is follows:

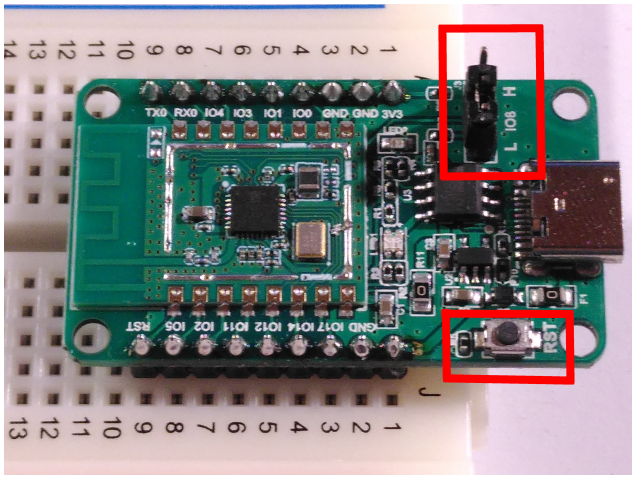

Figure 1: *The PineCone. Highlighted areas: mode switching bridge, reset button.*

1. Switch the PineCone to flashing mode: bridge the IO8 with H and push the reset button (see Figure 1).
2. Flash the compiled code:

   GNU/Linux: On GNU/Linux you can flash compiled code as shown in Listing 1. You have to adjust the project name to your project's name and the port to the USB port your PineCone is connected to. Usually, the first serial port is used, it's device file to be specified as port is `/dev/ttyUSB0`

   Listing 1: *Flashing on GNU/Linux*

   ```
   blflash flash build_out/<project name>.bin --port <port>
   ```

   Microsoft Windows (discouraged): If using Microsoft Windows, flash your output as shown in Listing 2. You have to use the device manager of your computer to figure out the port. The PineCone is registered there as *QinHeng Electronics CH340 serial converter*. Usually the port is named something like `COM5`

   Listing 2: *Flashing on Microsoft Windows*

   ```
   blflash flash build_out\<project name>.bin --port <PORT>
   ```

3. Swith the PineCone back to operating mode: bridge IO8 with L.
4. (Optional) Start the serial output: on GNU/Linux the screen tool is used to connect to the PineCone:

   Listing 3: *Connecting to the PineCone on GNU/Linux*

   ```
   screen <port> 2000000
   ```

   On Microsoft Windows, you can use the Google Chrome Web Serial Terminal[1]. Set the port and set the Baud rate to 2000000. Then click on the connect button.
5. Reset the PineCone: press the reset button.

[1] `https://googlechromelabs.github.io/serial-terminal/`