

Manually flashing MCUs using KIAUH

If the Klipper version on the MCUs is significantly older than the one on the host, Klipper will return an error, and flashing via the macros in the Mainsail console will no longer be possible. The MCUs must then be flashed manually. This document outlines the steps required to flash the MCUs using KIAUH

1. Access your 3D-printer via SSH. If you hadn't changed the default user and password from BTT they are still like this:

login: biqu
password: biqu

2. Execute the following command: `/home/biqu/kiauh/kiauh.sh`

```
Using username "biqu".
biqu@192.168.178.62's password:
biqu@bigtreotech-cb2:~$

v3.0.2-25.05.0-trunk rolling for BigTreeTech CB2 running Armbian Linux 6.1.115-btt-rk35xx

Packages:      Debian stable (bookworm)
Support:       DIY (custom image)
IPv4:          (LAN) 192.168.178.62 (WAN) 185.72.234.7
IPv6:          fd10:1487:179b:0:e130:1e0f:ed5c:7f90 (WAN) 2a01:586:8025:1:509f:1bd4:a147:36aa

Performance:
Load:          33%      Up time:      28 min
Memory usage: 18% of 1.92G
CPU temp:      51°C     Usage of /:  27% of 29G
RX today:      27 MiB
Commands:
Configuration : armbian-config
Monitoring    : htop

biqu@bigtreotech-cb2:~$ /home/biqu/kiauh/kiauh.sh
```

3. Choose option '4' [Advanced]

```

[ KIAUH ]
Klipper Installation And Update Helper

[ Main Menu ]

0) [Log-Upload]      Klipper: Installed: 1
                    Owner: Klipper3d
                    Repo: klipper
1) [Install]
2) [Update]
3) [Remove]
4) [Advanced]
5) [Backup]
6) [Settings]
7) [Community]
8) [Extensions]

Mainsail: Installed
Fluid: Not installed
Client-Config: Mainsail-Config
KlipperScreen: Installed
Crowdsnest: Installed

v6.0.0-beta.5      Changelog: https://git.io/JnmlX

Q) Quit

##### Perform action: 4
```

4. Choose option '3' [Build + Flash]

```

[ Advanced Menu ]

Klipper Firmware:
1) [Build]
2) [Flash]
3) [Build + Flash]
4) [Get MCU ID]

Repository Rollback:
6) [Klipper]
7) [Moonraker]

System:
8) [Change hostname]

Extra Dependencies:
5) [Input Shaper]

B) <- Back

##### Perform action: 3
```

5. Choose a configuration option according to the board you want to flash. In the picture below, option 1) is for the BTT Manta M8P V2 mainboard, and option 2) is for the BTT EBB36 V1.2 toolboards

```

[ Firmware Config Menu ]

Previously saved firmware configs found!

Select an existing config or create a new one.

Available firmware configs:
1) manta-m8p-v2-0.config
2) btt-ebb36-v1-2.config

N) Create new firmware config

B) <- Back

##### Select config or action to continue (default=N):
```

6. After the firmware build is complete, you must choose a flashing method. Select option 1) Regular flashing method:

```
Compiling out/src/stm32/hard_pwm.o
Building out/compile_time_request.o
Version: v0.13.0-177-gef4c76fe
Preprocessing out/src/generic/armcm_link.ld
Linking out/klipper.elf
Creating hex file out/klipper.bin
[OK] Firmware successfully built!
[OK] Firmware file located in '/home/biqu/klipper/out'!

~~~~~ [ MCU Flash Menu ] ~~~~~

Select the flash method for flashing the MCU.

ATTENTION:
Make sure to select the correct method for the MCU!
Not all MCUs support both methods!

1) Regular flashing method
2) Updating via SD-Card Update

B) < Back      H) Help [?]

##### Select flash method: [ ]
```

7. Choose 1) make flash (default):

```
Which flash command to use for flashing the MCU?

1) make flash (default)
2) make serialflash (stm32flash)

B) < Back      H) Help [?]

##### Select flash command: [ ]
```

8. The MCUs are connected via USB to the host, choose 1) USB:

```
Make sure that the controller board is connected now!

How is the controller board connected to the host?

1) USB
2) UART
3) USB (DFU mode)
4) USB (RP2040 mode)

B) < Back      H) Help [?]

##### Select connection type: 1[ ]
```

9. Choose which MCU do you want to flash. **MAKE SURE YOU SELECT THE CORRECT ONE!**

```
!!! ATTENTION !!!

Make sure, to select the correct MCU!
ONLY flash a firmware created for the respective MCU!

-----[List of detected MCUs]-----

0) usb-Klipper_stm32g0blxx_11004B001850425539383920-if00
1) usb-Klipper_stm32g0blxx_1E0040000950304158373420-if00
2) usb-Klipper_stm32g0blxx_37003F000E504B4633373520-if00

B) < Back

##### Select MCU to flash: [ ]
```

10. Type 'Y' for starting the flashing process:

```
!!! ATTENTION !!!

Before continuing the flashing process, please check
if all parameters were set correctly! Once you made
sure everything is correct, start the process. If any
parameter needs to be changed, you can go back (B)
step by step or abort and start from the beginning.

-----[Overview]-----

MCU: usb-Klipper_stm32g0blxx_37003F000E504B4633373520-if00
Connection: USB
Flash method: Regular
Flash command: flash
Firmware config: btt-manta-m8p-v1-1.config

Y) Start flash process
N) Abort - Return to Advanced Menu

B) < Back

##### Perform action (default=Y): [ ]
```

11. The Password is again requested. Type in the same password from Step1 :

```
##### Flashing '/dev/serial/by-id/usb-K

##### Stop klipper.service ...
[sudo] password for biqu: [ ]
```

12. If the flashing didn't succeed, try again until it works:

```
Failed to flash to /dev/serial/by-id/usb-Klipper_stm32g0b1
fu-util

If the device is already in bootloader mode it can be flas
following command:
make flash FLASH_DEVICE=0483:df11
OR
make flash FLASH_DEVICE=1209:beba

If attempting to flash via 3.3V serial, then use:
make serialflash FLASH_DEVICE=/dev/serial/by-id/usb-Klippe

make: *** [src/stm32/Makefile:107: flash] Error 255

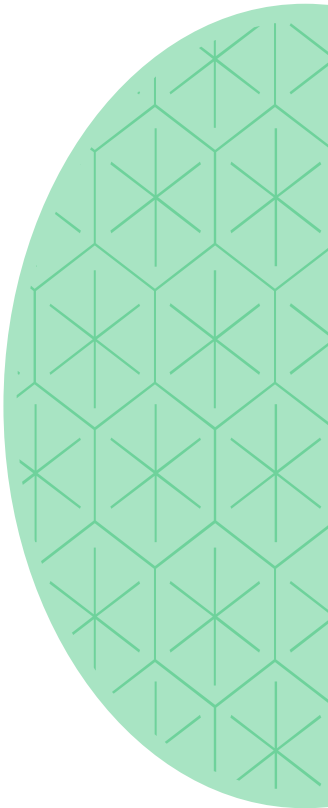
##### Start klipper.service ...
[OK] OK!

[ERROR] Flashing failed!
[ERROR] See the console output above!
```

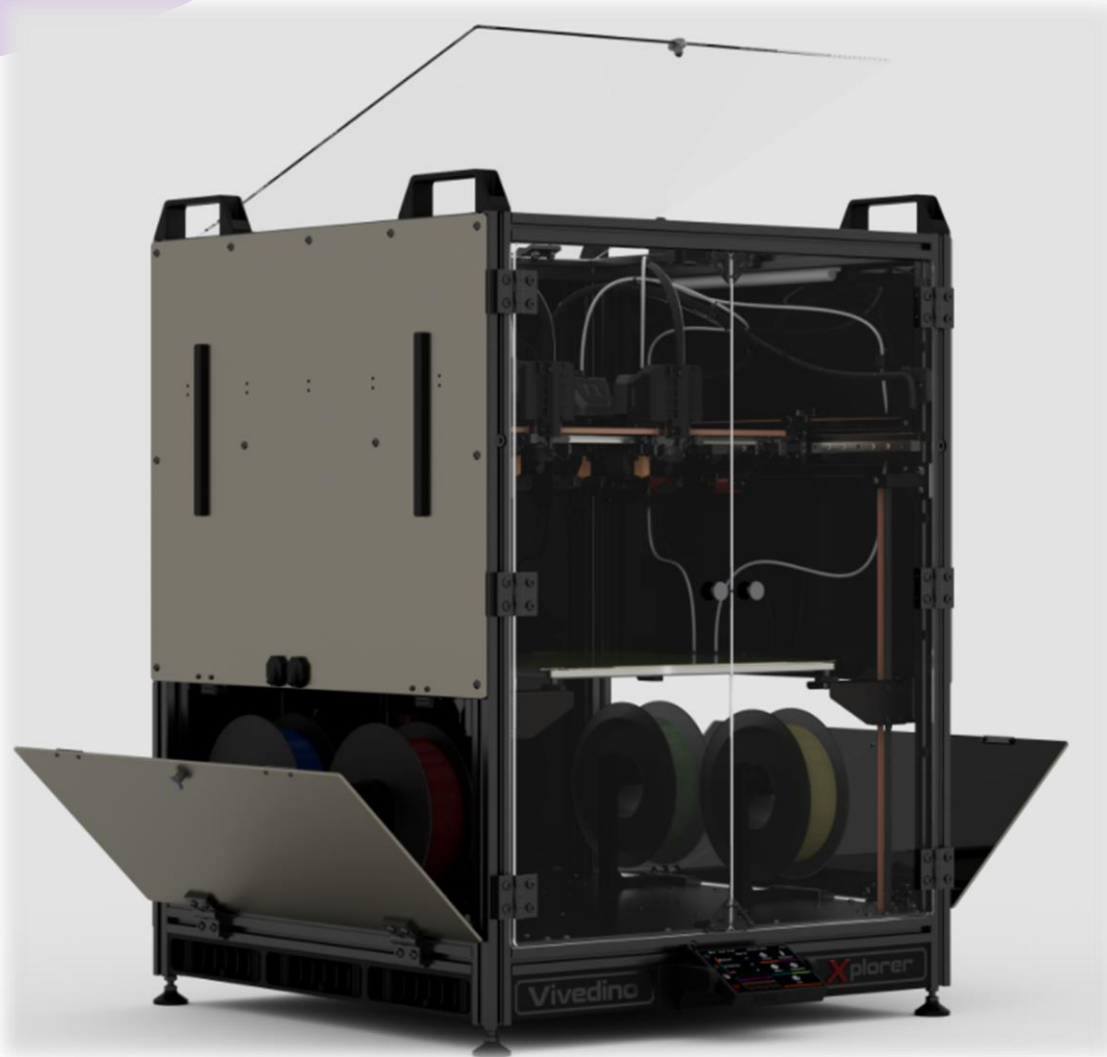
13. Once the console generates a message with 'Download,' like the one shown in the image below, it means the flashing was successful. Any other errors listed afterward can be ignored

```
Download      [      ] 0%      0 bytes
Download      [=     ] 4%     2048 bytes
Download      [==    ] 9%     4096 bytes
Download      [===   ] 12%    5120 bytes
Download      [====  ] 17%    7168 bytes
Download      [=====] 19%    8192 bytes
Download      [=====] 22%    9216 bytes
Download      [=====] 24%   10240 bytes
Download      [=====] 29%   12288 bytes
Download      [=====] 32%   13312 bytes
Download      [=====] 37%   15360 bytes
Download      [=====] 42%   17408 bytes
Download      [=====] 44%   18432 bytes
Download      [=====] 49%   20480 bytes
Download      [=====] 52%   21504 bytes
Download      [=====] 57%   23552 bytes
Download      [=====] 62%   25600 bytes
Download      [=====] 64%   26624 bytes
Download      [=====] 69%   28672 bytes
Download      [=====] 72%   29696 bytes
Download      [=====] 77%   31744 bytes
Download      [=====] 82%   33792 bytes
Download      [=====] 84%   34816 bytes
Download      [=====] 89%   36864 bytes
Download      [=====] 92%   37888 bytes
Download      [=====] 97%   39936 bytes
Download      [=====] 100%  41036 bytes
Download done.
File downloaded successfully
```

14. Repeat the steps described here for each MCU that must be flashed



Xplorer



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Happy printing!

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