

Inhaltsverzeichnis

- Boards** 1
- Creality 1.1.3** 1
- Creality 1.1.4** 1
- Creality 4.2.2** 2
- RAMPS 1.4** 2
- Bigtreetech SKR Pico** 4
- Klipper Konfiguration für Ender 3 mit BL-Touch 7

Boards

- MKS Gen L
- Bigtreetech SKR E3 1.4 Turbo

Creality 1.1.3



Creality 1.1.4

Dies waren die ersten Boards von Creality mit TMC Treibern, sie wurden als "Silent Board" verkauft. Es gab jedoch auch 1.1.4 die die alten Treiber hatten und so als OEM kamen. Man kann es leider nicht von außen feststellen.

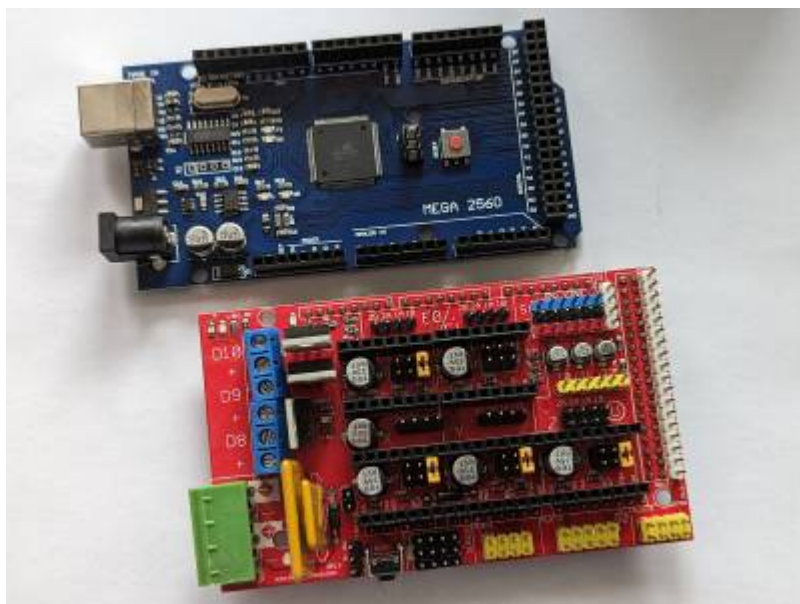
Die TMCs werden im Standalone-Modus gefahren.

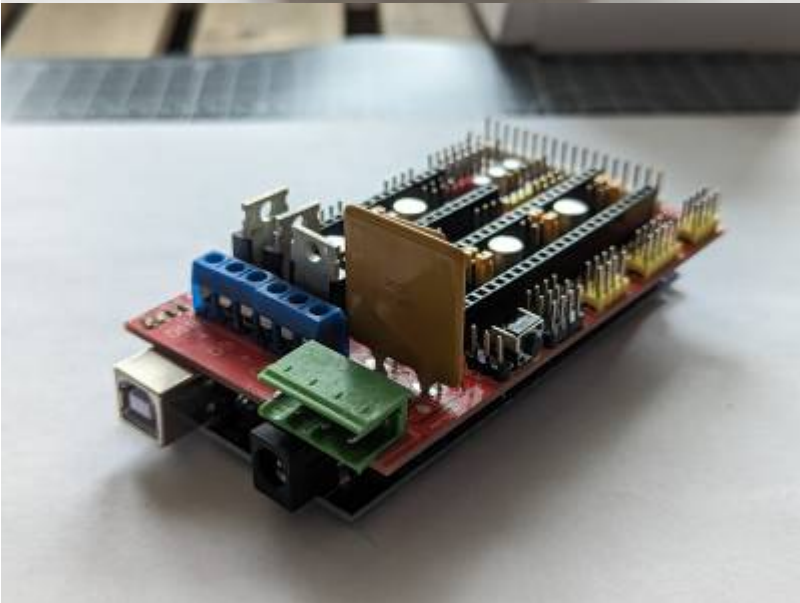
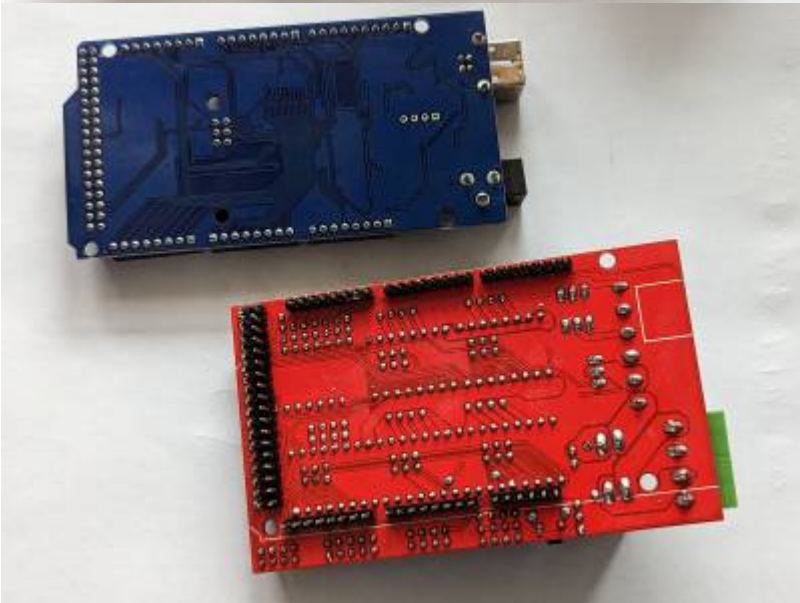
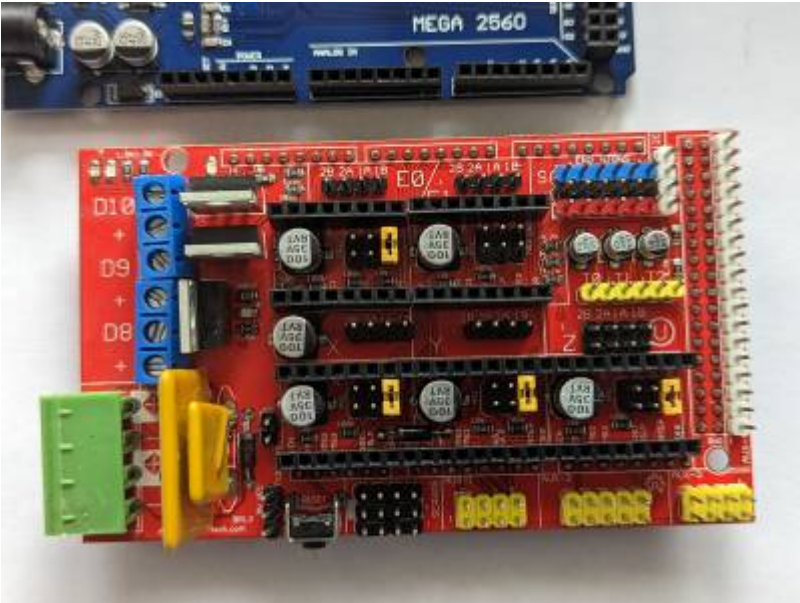
Creality 4.2.2

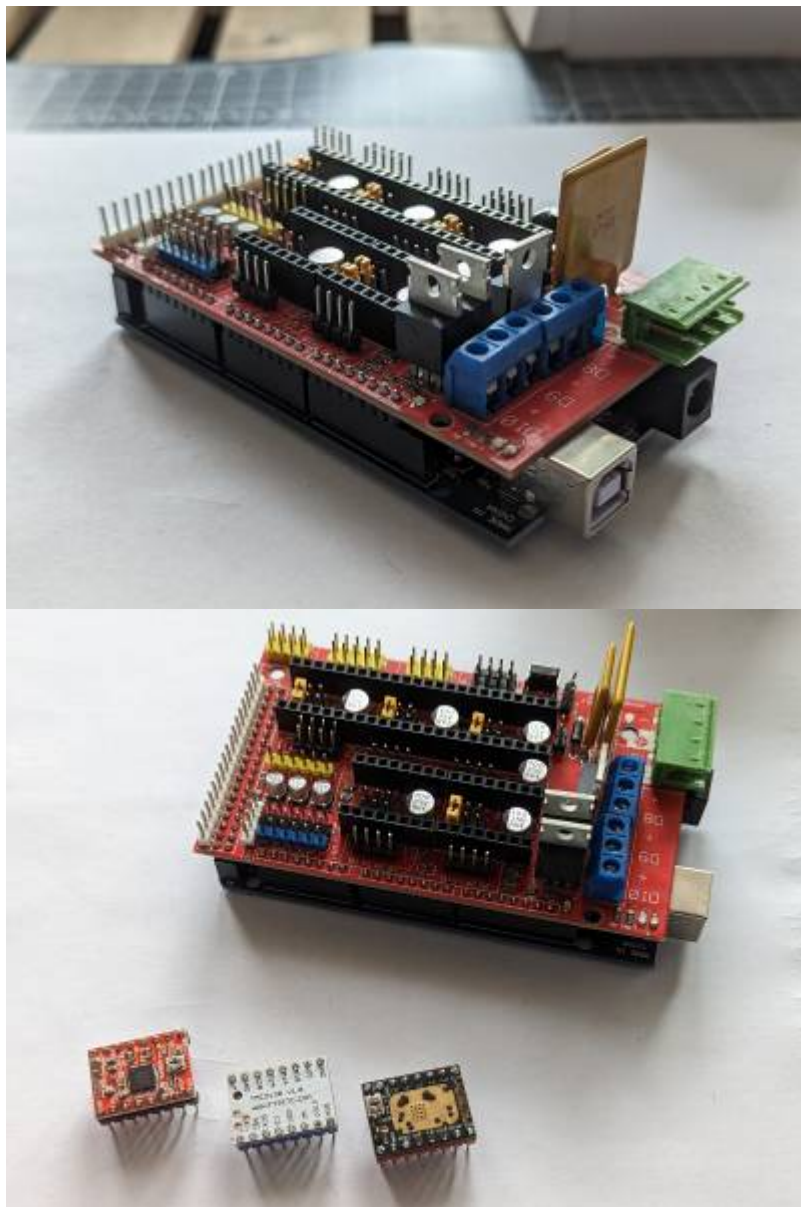


RAMPS 1.4

- <https://3dprint.wiki/reprap/electronics/ramps>
- <https://www.geeetech.com/wiki/index.php/Ramps1.4>
- https://www.youtube.com/watch?v=pWdm_KwDvd4
- <https://de.aliexpress.com/item/1005002011277357.html>



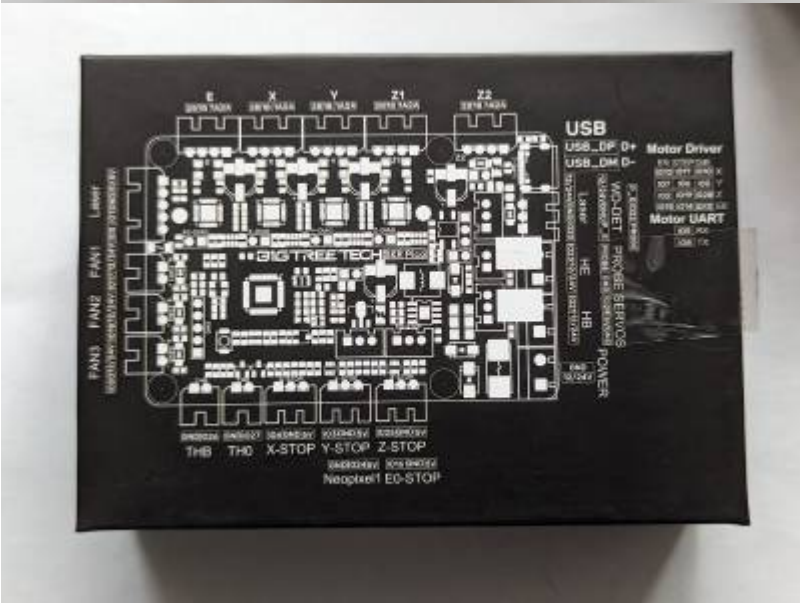
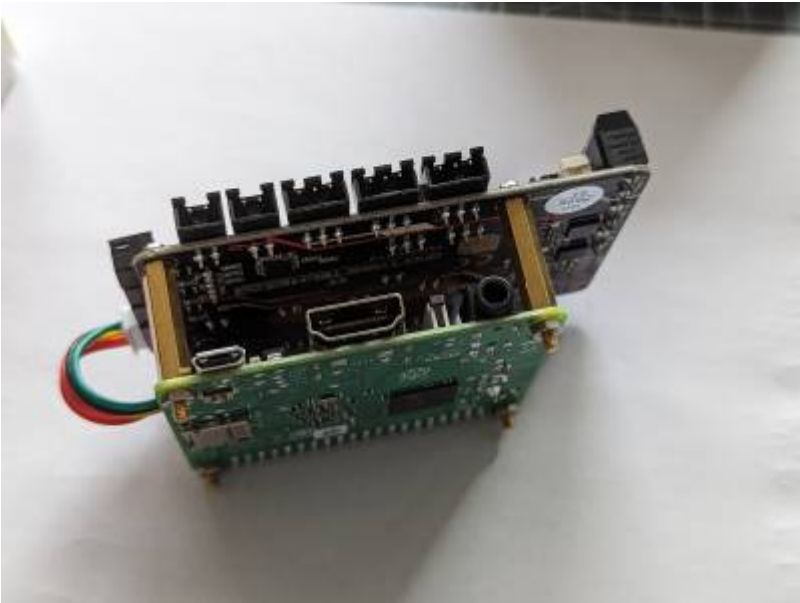




Bigtreetech SKR Pico

- Das Board hat einen RPi Pico Core mit TMC2209 Treibern im Uart Modus.
- Es hat die Abmessungen eines RPi und würde prima mit einem RPi 3, 4 oder Zero 2 zusammen passen.
- Marlin: https://github.com/thinkyhead/Marlin/tree/bf2_wip_rp2040_skr_pico_PR
- Benötigt bei Entnahme von mehr als 0,9A pro Treiber aktive Kühlung.







Klipper Konfiguration für Ender 3 mit BL-Touch

```
[include fluidd.cfg]
#[include adxl.cfg]
[include kiauh_macros.cfg]
[include macros.cfg]
[include start_end_macros.cfg]

[mcu]
serial: /dev/serial/by-id/usb-Klipper_rp2040_3672894954322E18-if00

[printer]
kinematics: cartesian
max_velocity: 300
max_accel: 3000
max_accel_to_decel: 1500
max_z_velocity: 5
square_corner_velocity: 5
max_z_accel: 100

[input_shaper]
shaper_freq_x: 98.8
shaper_type_x: mzv
shaper_freq_y: 40.8
shaper_type_y: mzv

[gcode_arcs]

[stepper_x]
step_pin: gpio11
dir_pin: !gpio10
enable_pin: !gpio12
microsteps: 16
```

```
full_steps_per_rotation: 200
rotation_distance: 40
endstop_pin: ^gpio4
# endstop_pin: tmc2209_stepper_x:virtual_endstop
# homing_retract_dist: 0
position_endstop: 0
position_max: 225
homing_speed: 100
```

```
[tmc2209 stepper_x]
uart_pin: gpio9
tx_pin: gpio8
uart_address: 0
run_current: 1
hold_current: 0.7
stealthchop_threshold: 0
# diag_pin: ^gpio4
# driver_SGTHRS: 100
```

```
[stepper_y]
step_pin: gpio6
dir_pin: !gpio5
enable_pin: !gpio7
microsteps: 16
full_steps_per_rotation: 200
rotation_distance: 40
endstop_pin: ^gpio3
# endstop_pin: tmc2209_stepper_y:virtual_endstop
# homing_retract_dist: 0
position_endstop: 0
position_max: 225
homing_speed: 100
```

```
[tmc2209 stepper_y]
uart_pin: gpio9
tx_pin: gpio8
uart_address: 2
run_current: 0.75
hold_current: 0.5
stealthchop_threshold: 0
diag_pin: ^gpio3
driver_SGTHRS: 100
```

```
[stepper_z]
step_pin: gpio19
dir_pin: gpio28
enable_pin: !gpio2
microsteps: 16
full_steps_per_rotation: 200
rotation_distance: 8
# endstop_pin: ^gpio25
```

```
endstop_pin:probe: z_virtual_endstop
position_min: -5
position_max: 255
homing_speed: 35

[tmc2209 stepper_z]
uart_pin: gpio9
tx_pin: gpio8
uart_address: 1
run_current: 0.7
hold_current: 0.5
stealthchop_threshold: 0

[extruder]
step_pin: gpio14
dir_pin: !gpio13
enable_pin: !gpio15
microsteps: 16
rotation_distance: 22.230
nozzle_diameter: 0.4
filament_diameter: 1.75
heater_pin: gpio23
sensor_type: EPCOS 100K B57560G104F
sensor_pin: gpio27
control = pid
pid_kp = 30.959
pid_ki = 1.433
pid_kd = 167.179
min_temp: 0
max_temp: 250
min_extrude_temp: 180
pressure_advance = 0.40
pressure_advance_smooth_time: 0.040

[tmc2209 extruder]
uart_pin: gpio9
tx_pin: gpio8
uart_address: 3
run_current: 0.7
hold_current: 0.5
stealthchop_threshold: 0

# [filament_switch_sensor runout_sensor]
# switch_pin: ^gpio16
# pause_on_runout: True

# [filament_motion_sensor smart_sensor]
# switch_pin: ^gpio16
# detection_length: 2.5

[heater_bed]
```

```
heater_pin: gpio24
sensor_type: EPCOS 100K B57560G104F
sensor_pin: gpio26
#control: pid
#pid_Kp=71.830
#pid_Ki=1.800
#pid_Kd=716.505
min_temp: 0
max_temp: 110

[fan]
pin: gpio17

[heater_fan hotend_fan]
pin: gpio18
heater: extruder
heater_temp: 50.0

[safe_z_home]
home_xy_position: 110, 110 # Change coordinates to the center of your print
bed
speed: 100
z_hop: 10 # Move up 10mm
z_hop_speed: 80

[bed_screws]
screw1: 30.5, 37
screw2: 30.5, 207
screw3: 204.5, 207
screw4: 204.5, 37
screw5: 110, 110

[bltouch]
sensor_pin: gpio22
control_pin: gpio29
#z_offset: 0.2
x_offset: -42
y_offset: 0
samples: 2

[bed_mesh]
speed: 150
horizontal_move_z: 5
mesh_min: 20, 30
mesh_max: 170, 210
probe_count: 5, 3

[temperature_sensor Board_MCU]
sensor_type: temperature_mcu
min_temp: 0
```

```
max_temp: 100

[temperature_sensor Raspberry_Pi]
sensor_type: temperature_host
min_temp: 0
max_temp: 100

#[neopixel board_rgb]
#pin: gpio24
#chain_count: 1
#color_order: GRB
#initial_RED: 0
#initial_GREEN: 0.5
#initial_BLUE: 0 # Paste here and save your klipper configuration

### <----- SAVE_CONFIG ----->
### DO NOT EDIT THIS BLOCK OR BELOW. The contents are auto-generated.
###
### [bltouch]
### z_offset = 2.050
###
### [bed_mesh Magnet plate]
### version = 1
### points =
###     -0.326250, -0.450000, -0.507500, -0.567500, -0.586250
###     -0.361250, -0.488750, -0.567500, -0.561250, -0.490000
###     -0.351250, -0.462500, -0.497500, -0.502500, -0.466250
### tension = 0.2
### min_x = 20.0
### algo = lagrange
### y_count = 3
### mesh_y_pps = 2
### min_y = 30.0
### x_count = 5
### max_y = 210.0
### mesh_x_pps = 2
### max_x = 170.0
###
### [heater_bed]
### control = pid
### pid_kp = 74.810
### pid_ki = 1.827
### pid_kd = 765.872
###
### [bed_mesh default]
### version = 1
### points =
###     -0.012500, -0.151250, -0.202500, -0.211250, -0.173750
###     0.207500, 0.043750, -0.051250, -0.112500, -0.077500
###     0.441250, 0.253750, 0.107500, -0.008750, -0.052500
### tension = 0.2
```

```
### min_x = 20.0
### algo = lagrange
### y_count = 3
### mesh_y_pps = 2
### min_y = 30.0
### x_count = 5
### max_y = 210.0
### mesh_x_pps = 2
### max_x = 170.0
```

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