

BIGTREE TECH Manta M5P ,CB1, TMC2209, BLTouch, stock Creality LCD-Display

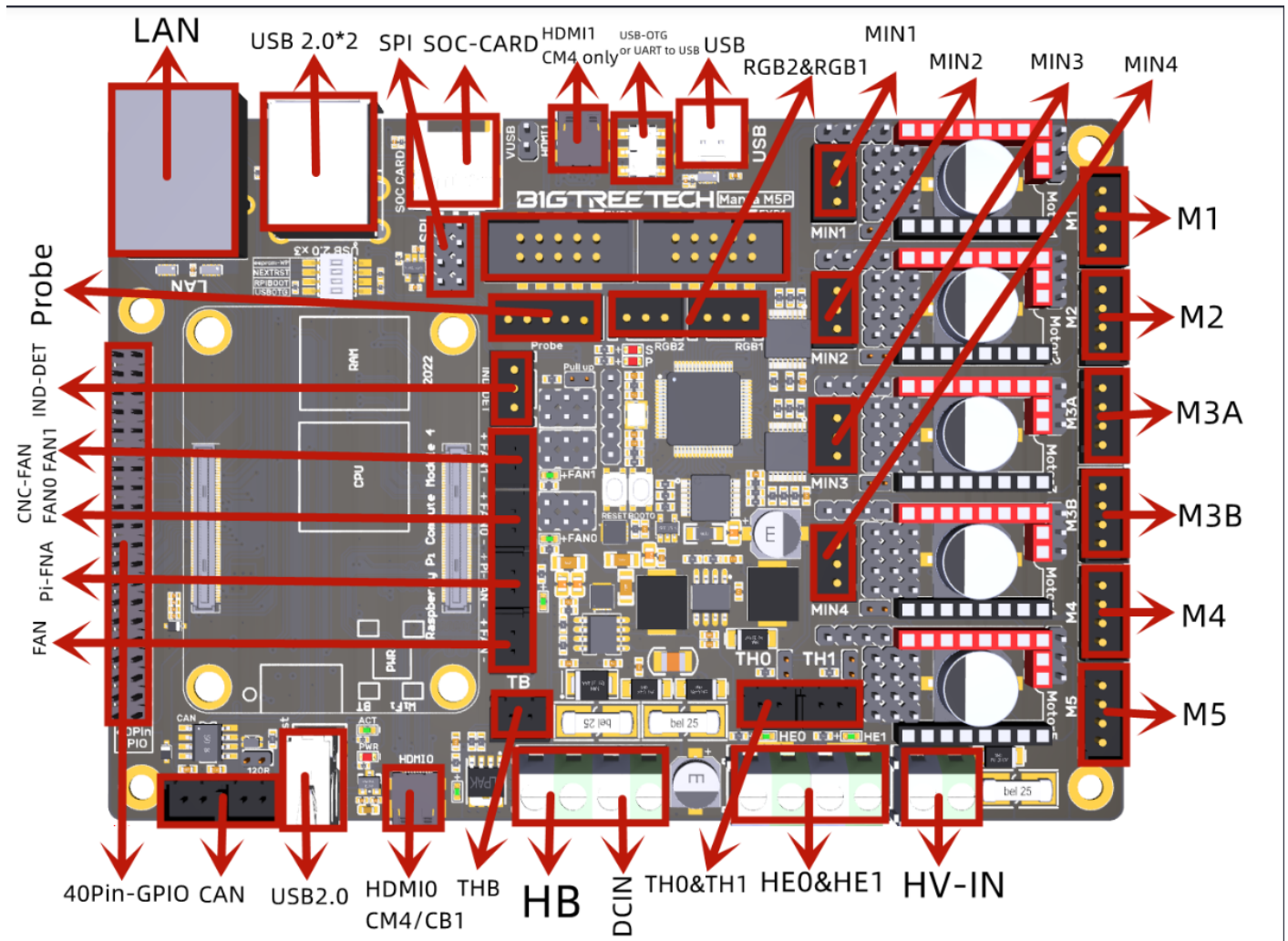
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Manta M5P Board details

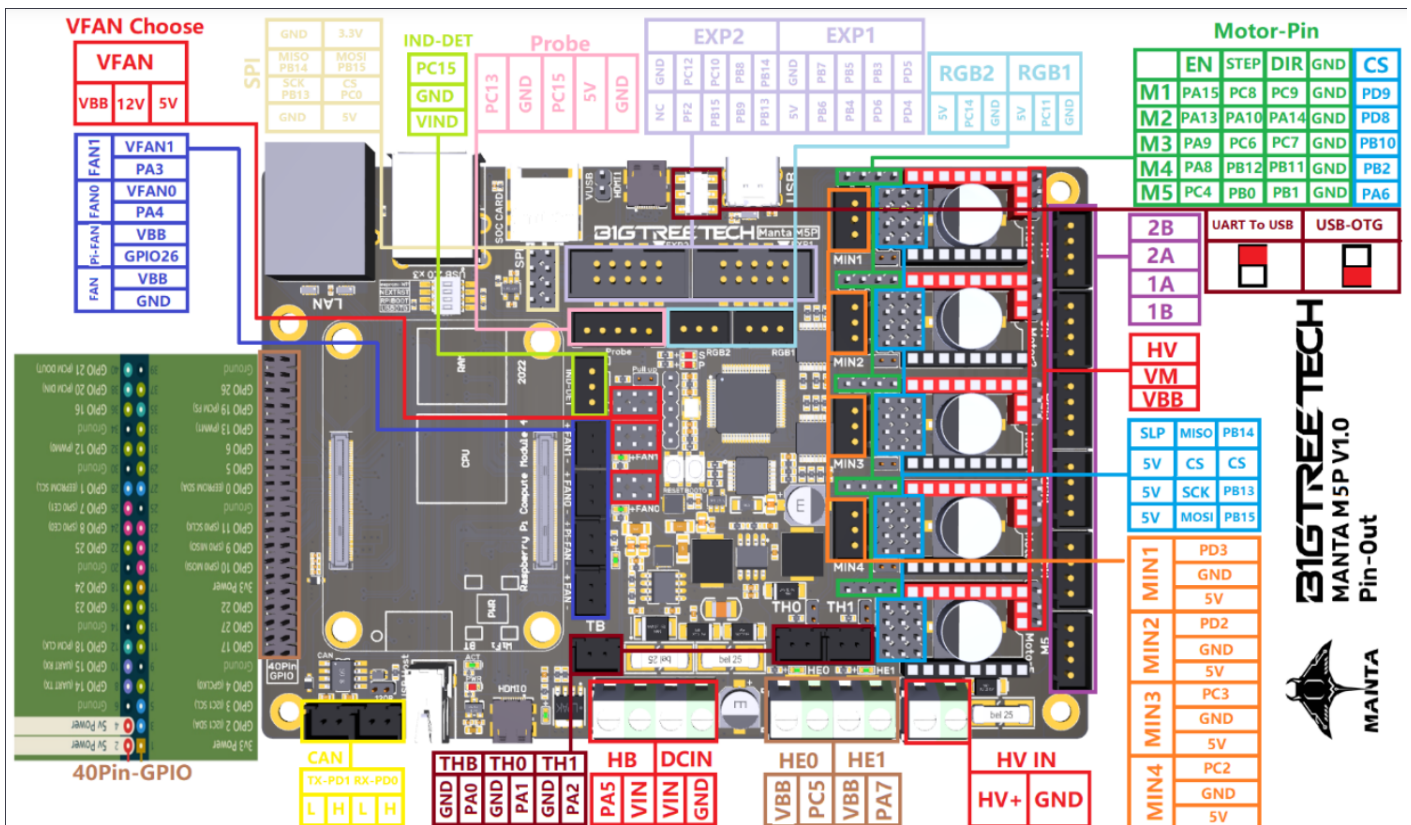
connections

[Webside by Bigtreeotech](#)

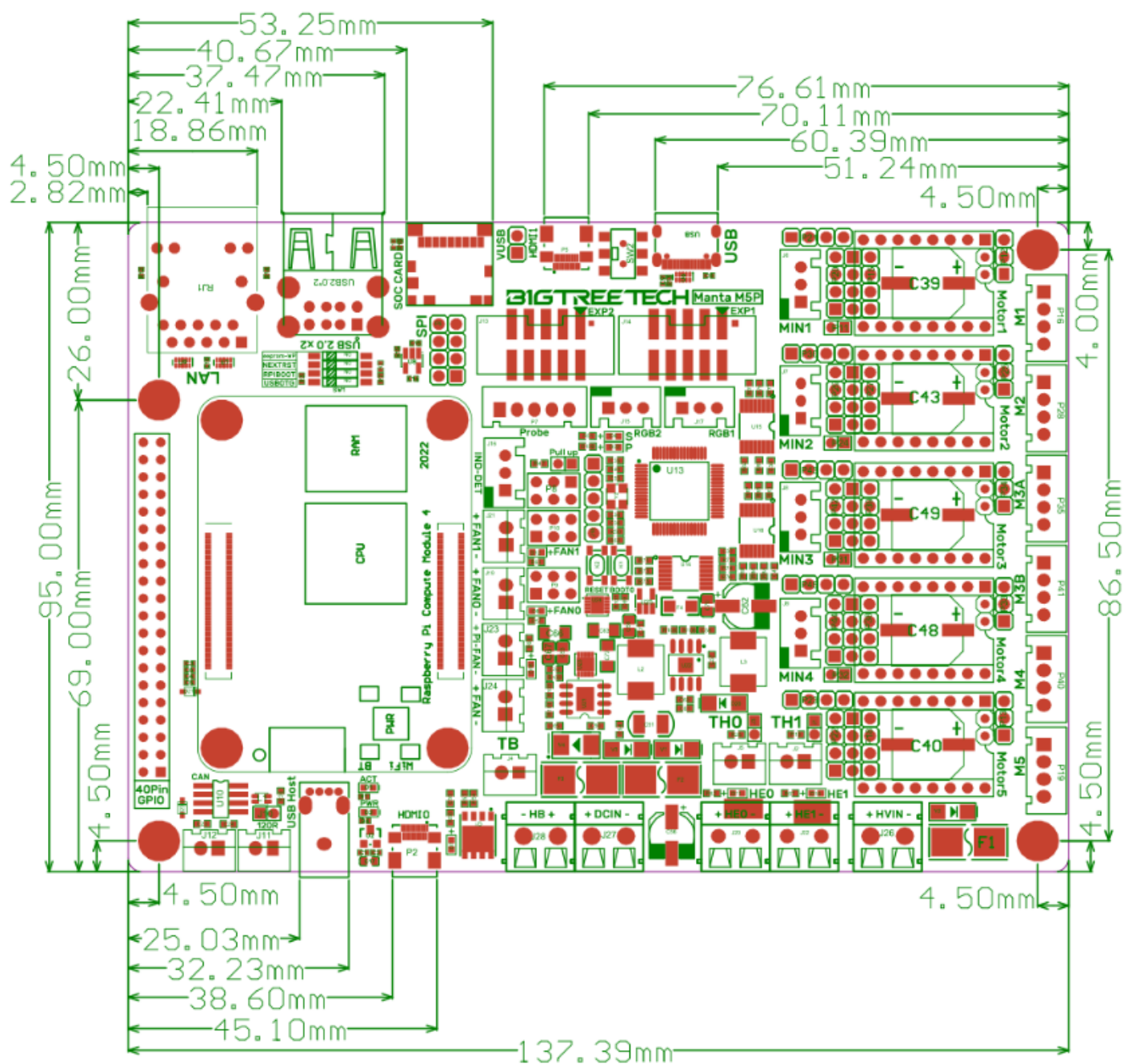
Connectors



Pinout



Dimensions

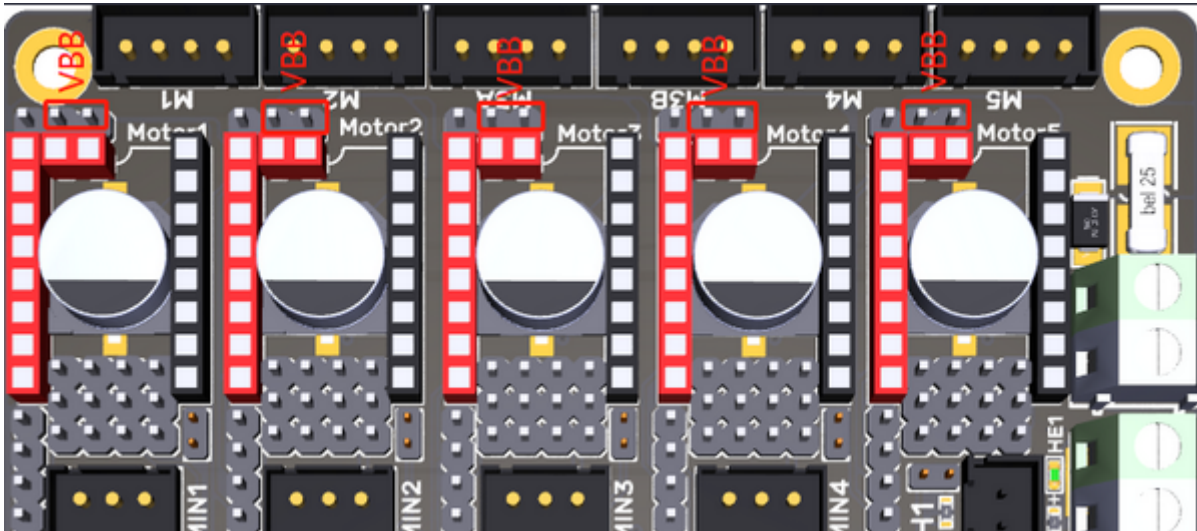


| ADXL345 pin | RPi pin | RPi pin name |
|--------------|---------|---------------------|
| 3V3 (or VCC) | 01 | 3.3V DC power |
| GND | 06 | Ground |
| CS | 24 | GPIO08 (SPI0_CE0_N) |
| SDO | 21 | GPIO09 (SPI0_MISO) |
| SDA | 19 | GPIO10 (SPI0_MOSI) |
| SCL | 23 | GPIO11 (SPI0_SCLK) |

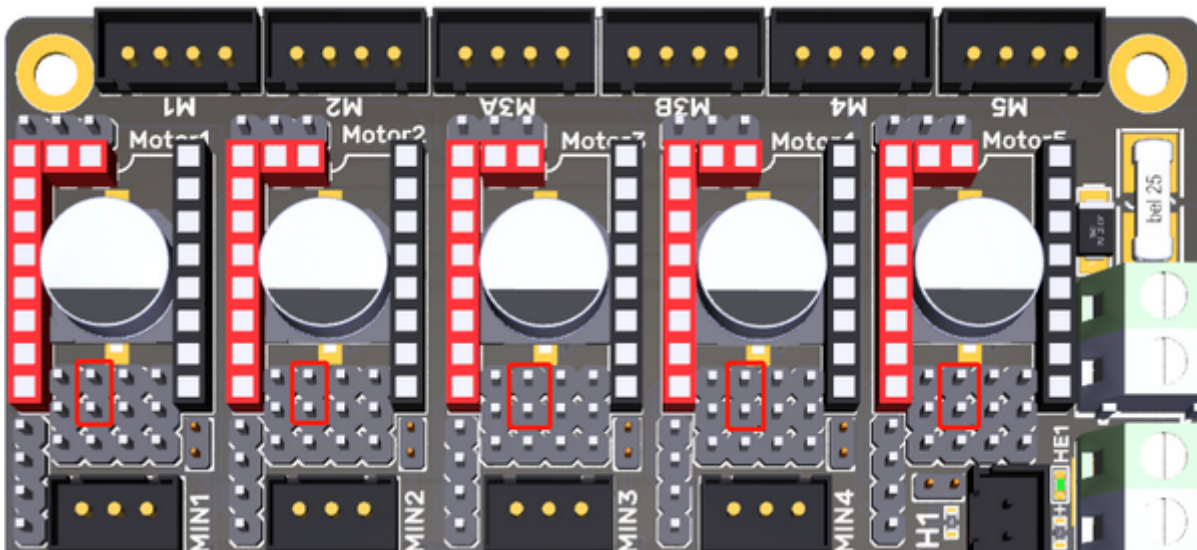
TMC2209

TMC2209 stepper driver

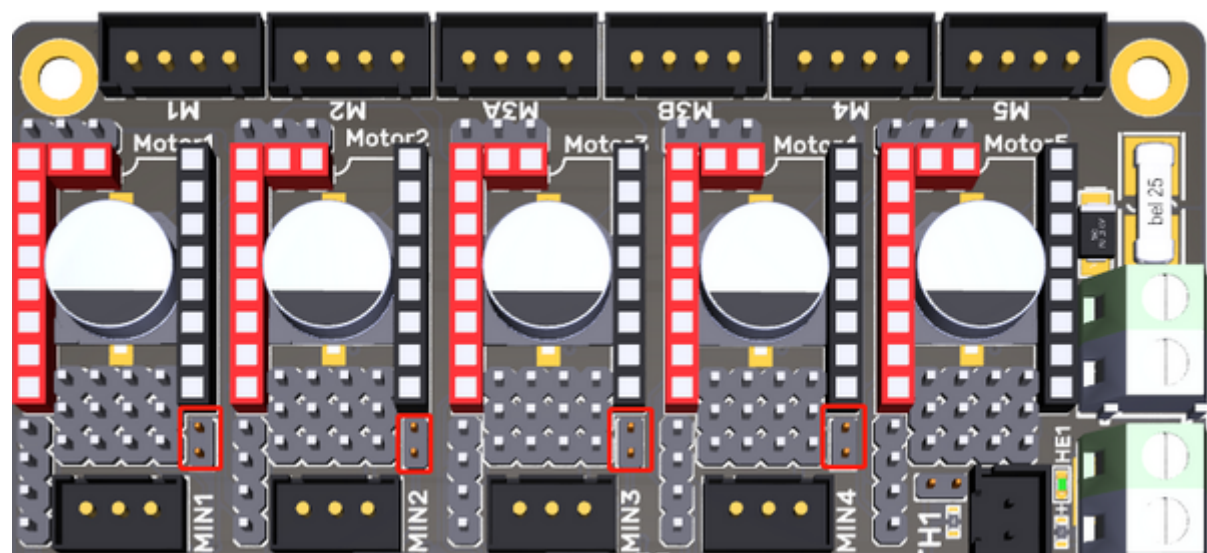
Schematic for 24 Volt powering



UART Mode of TMC Driver



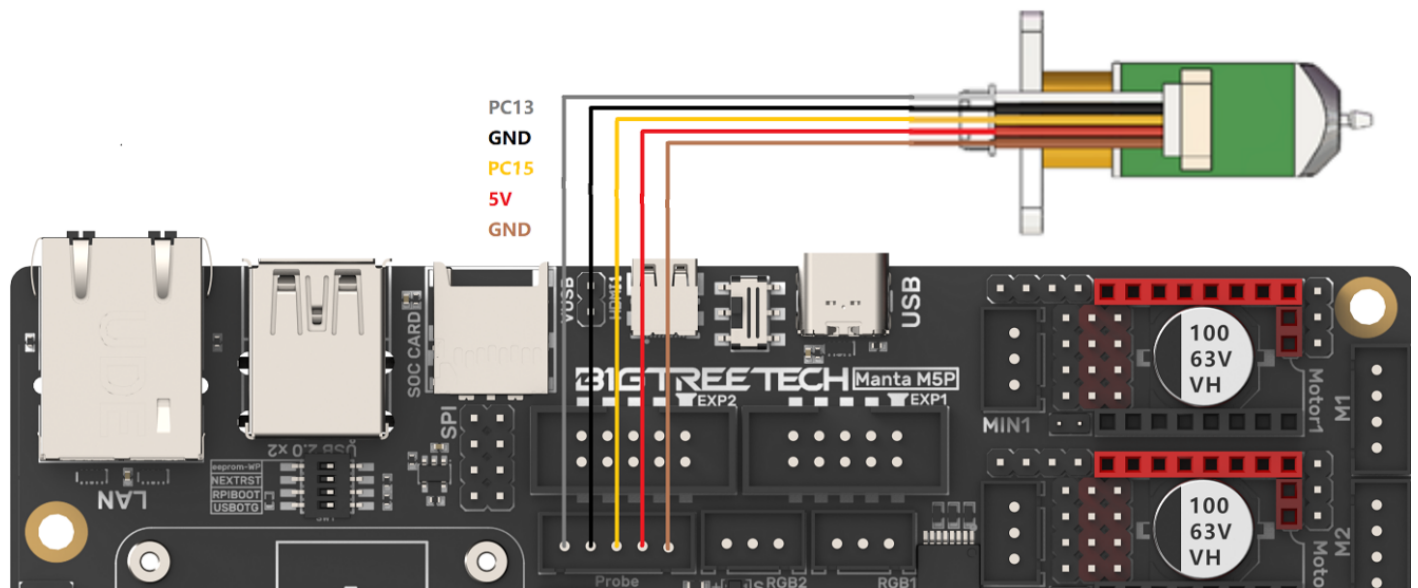
DIAG(Sensorless Homing) of TMC Driver



BLtouch

BLtouch

BLTouch Wiring



CB1

CB1

CB1 Software

[CB1 webside](#)

Release [download](#).

CB1

Shutdown with shelly plug s

I will switch off the "Shelly plug s" after the shutdown of the device with a delay of 30 seconds.

Create file with `sudo nano /usr/lib/systemd/system-shutdown/systemd-halt.service` .

```
[Unit]
Description=Run mycommand at shutdown
Requires=network.target
DefaultDependencies=no
Before=shutdown.target

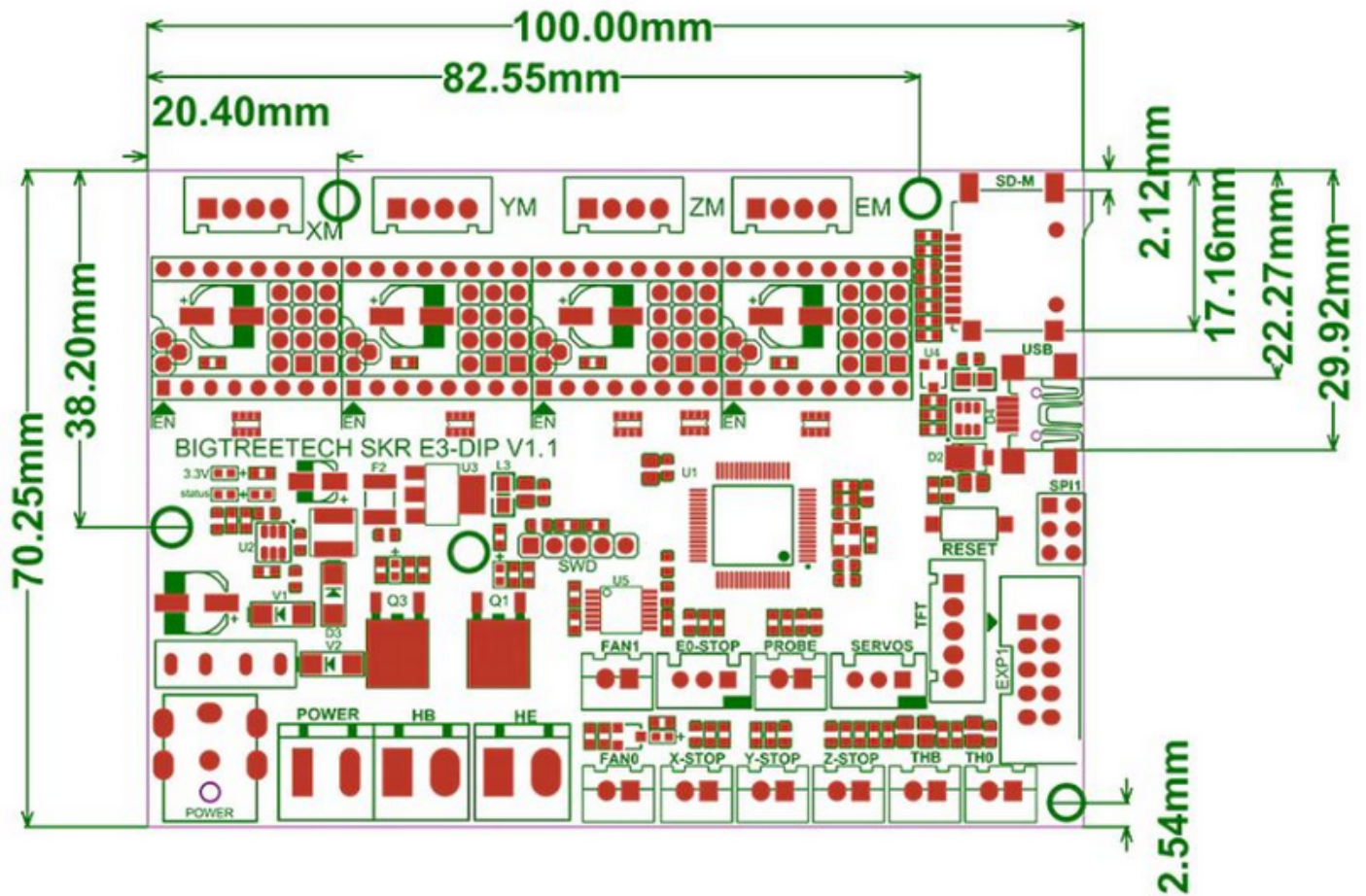
[Service]
Type=oneshot
RemainAfterExit=true
ExecStart=/bin/true
ExecStop=curl -u username:password "http://IP-Address/relay/0?turn=on&timer=30"

[Install]
WantedBy=multi-user.target
```

After that enable service with `sudo systemctl enable /usr/lib/systemd/system-shutdown/systemd-halt.service` .

Ender 2 pro board

E-2 pro 2.2.42 board



Klipper

Ender 2 pro printer.cfg

```
[include mainsail.cfg]
[include macros/*.cfg]

[virtual_sdcard]
path: /home/biqu/printer_data/gcodes
on_error_gcode: CANCEL_PRINT

[mcu]
serial: /dev/serial/by-id/usb-Klipper_XXXXXXXXXXXXXX

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

#####
# "RepRapDiscount 128x64 Full Graphic Smart Controller" type displays
#####

[board_pins]
aliases:
    # EXP1 header
    EXP1_1=PD5, EXP1_3=PB3, EXP1_5=PB5, EXP1_7=PB7, EXP1_9=<GND>,
    EXP1_2=PD4, EXP1_4=PD6, EXP1_6=PB4, EXP1_8=PB6, EXP1_10=<5V>,
    # EXP2 header
    EXP2_1=PB14, EXP2_3=PB8, EXP2_5=PC10, EXP2_7=PC12, EXP2_9=<GND>,
    EXP2_2=PB13, EXP2_4=PB9, EXP2_6=PB15, EXP2_8=<RST>, EXP2_10=<NC>

[display]
lcd_type: st7920
cs_pin: EXP1_4
sclk_pin: EXP1_5
```

```
sid_pin: EXP1_3
encoder_pins: ^EXP2_3, ^EXP2_5
click_pin: ^!EXP1_2
#kill_pin: ^!EXP2_8
```

```
[output_pin beeper]
pin: EXP1_1
```

```
#####
```

```
# Temperature Sensors
```

```
#####
```

```
[temperature_sensor CB1]
sensor_type: temperature_host
min_temp: 10
max_temp: 100
```

```
[temperature_sensor M5P]
sensor_type: temperature_mcu
min_temp: 10
max_temp: 100
```

```
#####
```

```
# Fan configuration
```

```
#####
```

```
[heater_fan HotendFan]
pin: PA3
max_power: 1.0
fan_speed: 1.0
kick_start_time: 0.1
heater: extruder
heater_temp: 50.0
```

```
[fan]
pin: PA4
```

```
#[heater_fan SoC_fan]
#pin: cb1:gpio79
```

```
#####  
# BLTouch Sensors  
#####
```

```
[bltouch]  
sensor_pin: PC13  
control_pin: PC15  
samples: 2  
#horizontal_move_z: 10  
speed: 20  
x_offset: -41  
y_offset: -8  
#z_offset: 0.0
```

```
#####  
# Bed Mesh Settings  
#####
```

```
[bed_mesh]  
speed: 100  
horizontal_move_z: 10  
mesh_min: 10, 5  
mesh_max: 113, 135  
probe_count: 4, 4  
mesh_pps: 2,2  
fade_start: 1  
fade_end: 10  
fade_target: 0
```

```
#####  
# NeoPixel configuration  
#####
```

```
[neopixel Licht]  
pin: PC11  
chain_count: 1  
initial_RED: 0.0  
initial_GREEN: 1.0  
initial_BLUE: 0.0
```

```
initial_WHITE: 0.0
```

```
#####
```

```
# X-Axis configuration
```

```
#####
```

```
[stepper_x]
```

```
step_pin: PC8
```

```
dir_pin: !PC9
```

```
enable_pin: !PA15
```

```
microsteps: 16
```

```
rotation_distance: 40
```

```
endstop_pin: ^PD3
```

```
position_endstop: 0
```

```
position_max: 155
```

```
homing_speed: 50
```

```
[tmc2209 stepper_x]
```

```
uart_pin: PD9
```

```
run_current: 0.800
```

```
diag_pin: PD3
```

```
stealthchop_threshold: 999999
```

```
#####
```

```
# Y-Axis configuration
```

```
#####
```

```
[stepper_y]
```

```
step_pin: PA10
```

```
dir_pin: !PA14
```

```
enable_pin: !PA13
```

```
microsteps: 16
```

```
rotation_distance: 40
```

```
endstop_pin: ^PD2
```

```
position_endstop: 0
```

```
position_max: 150
```

```
homing_speed: 50
```

```
[tmc2209 stepper_y]
```

```
uart_pin: PD8
```

```
run_current: 0.800
diag_pin: PD2
stealthchop_threshold: 999999
```

```
#####
# Z-Axis configuration
#####
```

```
[stepper_z]
step_pin: PC6
dir_pin: PC7
enable_pin: !PA9
microsteps: 16
rotation_distance: 8
#endstop_pin: ^PC3
endstop_pin: probe:z_virtual_endstop
#position_endstop: 0.0
position_max: 170
position_min: -2.0
```

```
[tmc2209 stepper_z]
uart_pin: PB10
run_current: 0.800
diag_pin: PC3
stealthchop_threshold: 999999
```

```
[safe_z_home]
home_xy_position: 117,85 # Change coordinates to the center of your print bed
speed: 50
z_hop: 10                # Move up 10mm
z_hop_speed: 5
```

```
#####
# Extruder configuration
#####
```

```
[extruder]
step_pin: PB12
dir_pin: PB11
enable_pin: !PA8
```

```
microsteps: 16
#rotation_distance: 33.500
rotation_distance: 23.467
nozzle_diameter: 0.400
filament_diameter: 1.750
heater_pin: PC5
sensor_type: EPCOS 100K B57560G104F
sensor_pin: PA1
#control: pid
#pid_Kp: 21.527
#pid_Ki: 1.063
#pid_Kd: 108.982
min_temp: 0
max_temp: 270
```

```
[tmc2209 extruder]
uart_pin: PB2
run_current: 0.800
diag_pin: PC2
stealthchop_threshold: 999999
```

```
#####
# Bed configuration
#####
```

```
[heater_bed]
heater_pin: PA5
sensor_type: Generic 3950
sensor_pin: PA0
#control: watermark
min_temp: 0
max_temp: 130
```


StartStopPrinter.cfg

```
#####  
##    Start print macro  
#####  
  
[gcode_macro START_PRINT]  
gcode:  
    # Get Params  
    {% set t_extruder = params.T_EXTRUDER|default(205)|float %}  
    {% set t_bed = params.T_BED|default(60)|float %}  
    {% set b_min_x = params.BUILD_MIN_X|default(10)|float %}  
    {% set b_min_y = params.BUILD_MIN_Y|default(10)|float %}  
    {% set b_max_x = params.BUILD_MAX_X|default(133)|float %}  
    {% set b_max_y = params.BUILD_MAX_Y|default(145)|float %}  
  
    #Set LED Red  
    SET_LED LED="Licht" Red=1 GREEN=0 BLUE=0 SYNC=0 TRANSMIT=1  
  
    M117 Bett heizt  
  
    # Start  
    M140 S{t_bed}                ; Setze Heatbed Temperatur  
    M190 S{t_bed}                ; Warte auf Bed Zieltemperatur  
  
    #Set LED Blue  
    SET_LED LED="Licht" Red=0 GREEN=0 BLUE=1 SYNC=0 TRANSMIT=1  
  
    M117 Home xyz  
  
    G28                          ; Home  
    M83                          ; Extruder relativer Modus  
  
    M117 Kallibrierung
```

```

# Start probing
#BED_MESH_CALIBRATE PROFILE=mesh1 METHOD=automatic
BED_MESH_CALIBRATE AREA_START={b_min_x},{b_min_y} AREA_END={b_max_x},{b_max_y}


G1 X5 Y5 Z15 F2200
#G1 Z0.2 F3000
G92 E0.0 ; Extruder Reset
G90 ; Absolute Positionierung


#Set LED Red
SET_LED LED="Licht" Red=1 GREEN=0 BLUE=0 SYNC=0 TRANSMIT=1


M117 Hotend heizt


M104 S{t_extruder} ; Setze Hotend Temperatur
M109 S{t_extruder} ; Warte auf Hotend Zieltemperatur


#Set LED White
SET_LED LED="Licht" RED=1 GREEN=1 BLUE=1 SYNC=0 TRANSMIT=1


# _PRIME_LINE;macro


G1 E8 F2000
G1 Z0.3 F3000 ; put down hotend
G1 X5 Y5 F2200


M82 ; Absolute Positionierung
G92 E0 ;zero the extruded length again


M117 Druck aktiv


#####
## End print macro
#####

[gcode_macro PRINT_END]
gcode:
    TURN_OFF_HEATERS

```

```
G91                                ; Relative Position
G1 E-5 F3000                       ; Retract
G1 X-0.5 Y-0.5 E-5
G90                                ; Absolute Positionierung
G1 X83 Y145 F2200                   ; Bewege den Kopf nach hinten in die Mitte
M107                               ; Partcooling Fan deaktivieren
M84
M117 Druck fertig
```

```
#Turn LED off
```

```
SET_LED LED="Licht" RED=0 GREEN=0 BLUE=0 SYNC=0 TRANSMIT=1
```

```
NOTIFY_PRINT_DONE
```

```
#####
```

```
## Prime Line macro (not in use)
```

```
#####
```

```
[gcode_macro _PRIME_LINE]
```

```
gcode:
```

```
G90                                ; Absolute Position
G1 E10 F2000
G1 Z0.3 F3000                       ; put down hotend
G1 X5 Y5 F2200
G1 X5 Y5 Z0.2 F3000                 ; get ready to prime
G92 E0                             ; reset extrusion distance
G1 X110 E15 F600                   ; prime nozzle
G1 X140 F5000                       ; quick wipe
```

```
#####
```

```
## Mesh probe macro (not in use)
```

```
#####
```

```
[gcode_macro probe_mesh]
```

```
gcode:
```

```
# Set extruder and bed temperature
M190 S60
# Home all axis
G28
# Start probing
```

```
BED_MESH_CALIBRATE PROFILE=mesh1 METHOD=automatic
```

```
# Turn off heaters afterward
```

```
TURN_OFF_HEATERS
```

macro.cfg

```
#####  
##    Start print macro  
#####  
  
[gcode_macro START_PRINT]  
gcode:  
    # Get Params  
    {% set t_extruder = params.T_EXTRUDER|default(205)|float %}  
    {% set t_bed = params.T_BED|default(60)|float %}  
    {% set b_min_x = params.BUILD_MIN_X|default(10)|float %}  
    {% set b_min_y = params.BUILD_MIN_Y|default(10)|float %}  
    {% set b_max_x = params.BUILD_MAX_X|default(133)|float %}  
    {% set b_max_y = params.BUILD_MAX_Y|default(145)|float %}  
  
    #Set LED Red  
    SET_LED LED="Licht" Red=1 GREEN=0 BLUE=0 SYNC=0 TRANSMIT=1  
  
    M117 Bett heizt  
  
    # Start  
    M140 S{t_bed}                ; Setze Heatbed Temperatur  
    M190 S{t_bed}                ; Warte auf Bed Zieltemperatur  
  
    #Set LED Blue  
    SET_LED LED="Licht" Red=0 GREEN=0 BLUE=1 SYNC=0 TRANSMIT=1  
  
    M117 Home xyz  
  
    G28                          ; Home  
    M83                          ; Extruder relativer Modus  
  
    M117 Kallibrierung
```

```

# Start probing
#BED_MESH_CALIBRATE PROFILE=mesh1 METHOD=automatic
BED_MESH_CALIBRATE AREA_START={b_min_x},{b_min_y} AREA_END={b_max_x},{b_max_y}


G1 X5 Y5 Z15 F2200
#G1 Z0.2 F3000
G92 E0.0 ; Extruder Reset
G90 ; Absolute Positionierung


#Set LED Red
SET_LED LED="Licht" Red=1 GREEN=0 BLUE=0 SYNC=0 TRANSMIT=1


M117 Hotend heizt


M104 S{t_extruder} ; Setze Hotend Temperatur
M109 S{t_extruder} ; Warte auf Hotend Zieltemperatur


#Set LED White
SET_LED LED="Licht" RED=1 GREEN=1 BLUE=1 SYNC=0 TRANSMIT=1


# _PRIME_LINE;macro


G1 E8 F2000
G1 Z0.3 F3000 ; put down hotend
G1 X5 Y5 F2200


M82 ; Absolute Positionierung
G92 E0 ;zero the extruded length again


M117 Druck aktiv


#####
## End print macro
#####

[gcode_macro PRINT_END]
gcode:
    TURN_OFF_HEATERS

```

```
G91                                ; Relative Position
G1 E-5 F3000                       ; Retract
G1 X-0.5 Y-0.5 E-5
G90                                ; Absolute Positionierung
G1 X83 Y145 F2200                   ; Bewege den Kopf nach hinten in die Mitte
M107                               ; Partcooling Fan deaktivieren
M84
M117 Druck fertig
```

```
#Turn LED off
```

```
SET_LED LED="Licht" RED=0 GREEN=0 BLUE=0 SYNC=0 TRANSMIT=1
```

```
NOTIFY_PRINT_DONE
```

```
#####
```

```
## Prime Line macro (not in use)
```

```
#####
```

```
[gcode_macro _PRIME_LINE]
```

```
gcode:
```

```
G90                                ; Absolute Position
G1 E10 F2000
G1 Z0.3 F3000                       ; put down hotend
G1 X5 Y5 F2200
G1 X5 Y5 Z0.2 F3000                 ; get ready to prime
G92 E0                             ; reset extrusion distance
G1 X110 E15 F600                   ; prime nozzle
G1 X140 F5000                       ; quick wipe
```

```
#####
```

```
## Mesh probe macro (not in use)
```

```
#####
```

```
[gcode_macro probe_mesh]
```

```
gcode:
```

```
# Set extruder and bed temperature
M190 S60
# Home all axis
G28
# Start probing
```

```
BED_MESH_CALIBRATE PROFILE=mesh1 METHOD=automatic
```

```
# Turn off heaters afterward
```

```
TURN_OFF_HEATERS
```