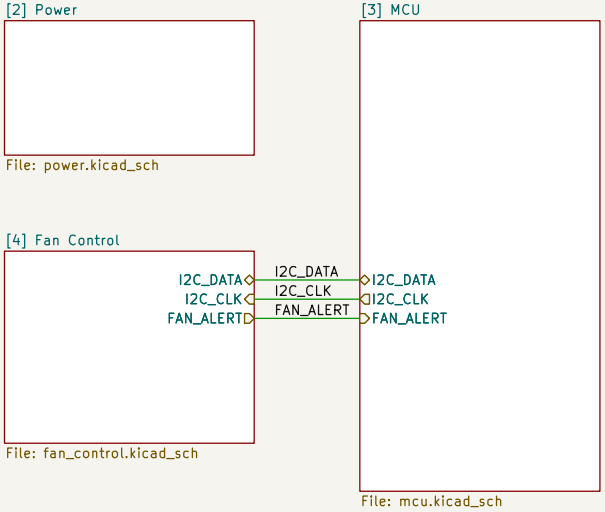
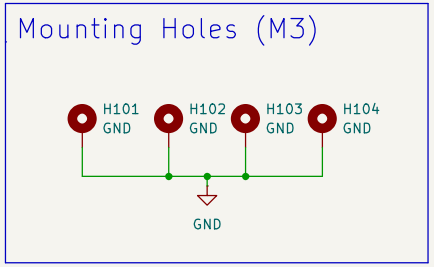
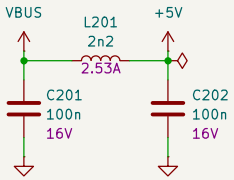




LP		
Sheet: /		
File: radiator_booster.kicad_sch		
Title: Radiator Booster		
Size: A4	Date: 2025-01-19	**Rev: 0.1**
KiCad E.D.A. 8.0.6		Id: 1/4

Input Filter

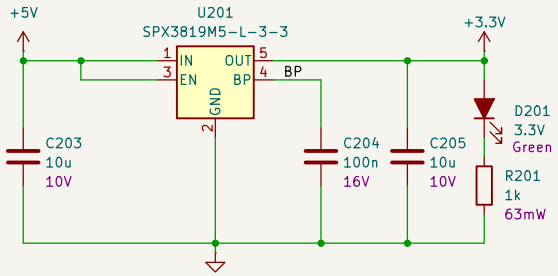
L(ESR)=0.15R
I(DC)=500mA (esp) + Nx150mA per PWM Fan



VBUS power comes from USB Type C Connector

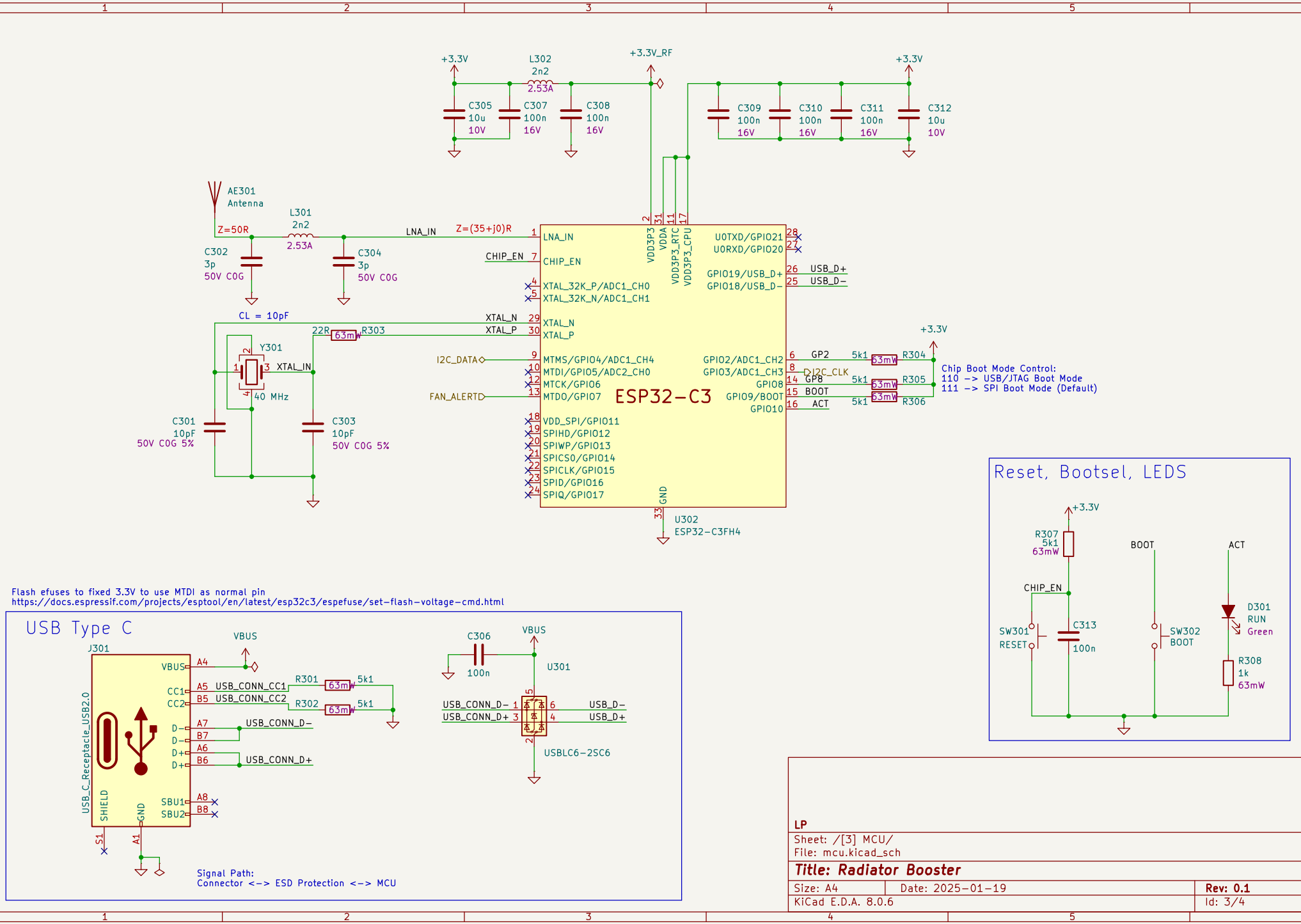
3.3V Supply (LDO)

* Vin(MAX)=5V
* Iout(MAX)=500mA

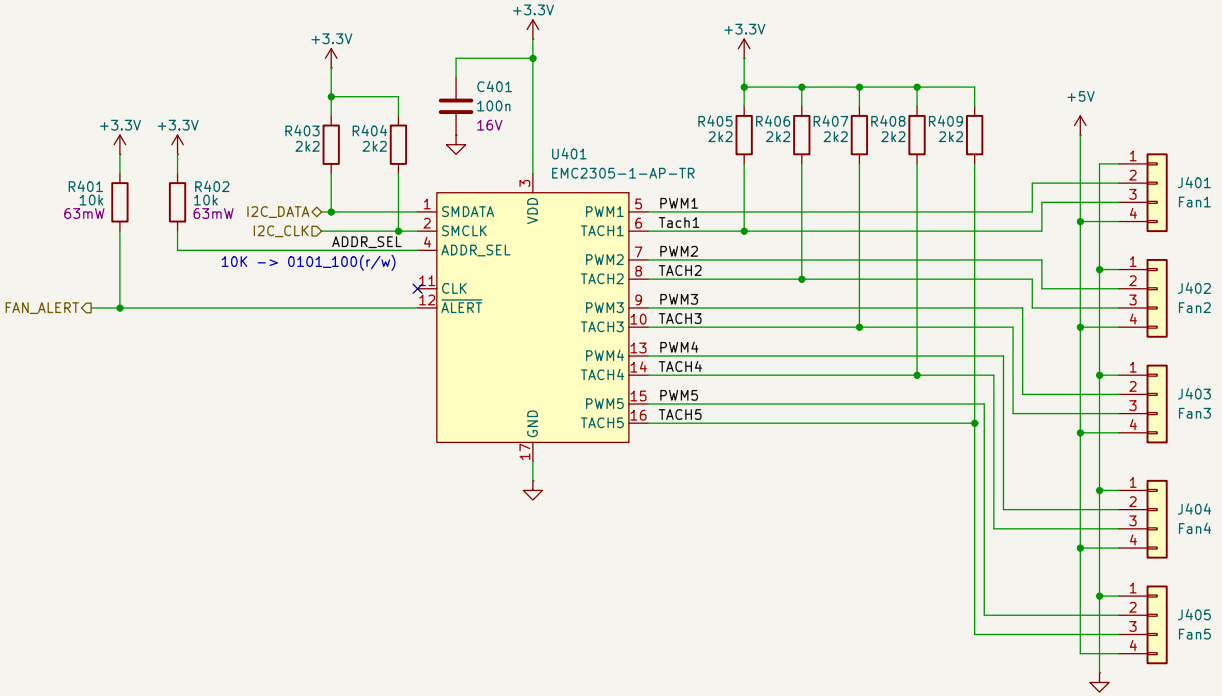


VBUS power comes from USB Type C Connector

LP		
Sheet: /[2] Power/ File: power.kicad_sch		
Title: Radiator Booster		
Size: A4	Date: 2025-01-19	**Rev: 0.1**
KiCad E.D.A. 8.0.6		Id: 2/4

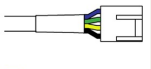


LP		
Sheet: /[3] MCU/		
File: mcu.kicad_sch		
Title: Radiator Booster		
Size: A4	Date: 2025-01-19	**Rev: 0.1**
KiCad E.D.A. 8.0.6		Id: 3/4



Pin configuration

4 pin 5V fans (PWM)



All Noctua fans provide a tachometer output signal of the following characteristics:

- two cycles per revolution
- open collector output
- Maximum current is 5mA for 5V

As specified by Intel (c.f. "4-Wire Pulse Width Modulation (PWM) Controlled Fans", Intel Corporation September 2005, revision 1.3), the square wave type PWM signal has to be supplied to the PWM input (pin 4) of the fan and must conform to the following specifications:

- Target frequency: 25kHz, acceptable range 21kHz to 28kHz
- Maximum voltage for logic low: VIL=0,8V
- Absolute maximum current sourced: Imax=5mA (short circuit current)
- Absolute maximum voltage level: VMax=5,25V (open circuit voltage)
- Allowed duty-cycle range 0% to 100%

The signal is not inverted, 100% PWM duty cycle (= 5V DC) results in maximum fan speed. External pull-up is not necessary as the signal is pulled up to 3,3V/5V inside the fan.

LP

Sheet: /[4] Fan Control/
File: fan_control.kicad_sch

Title: Radiator Booster

Size: A4	Date: 2025-01-19	**Rev: 0.1**
KiCad E.D.A. 8.0.6		Id: 4/4