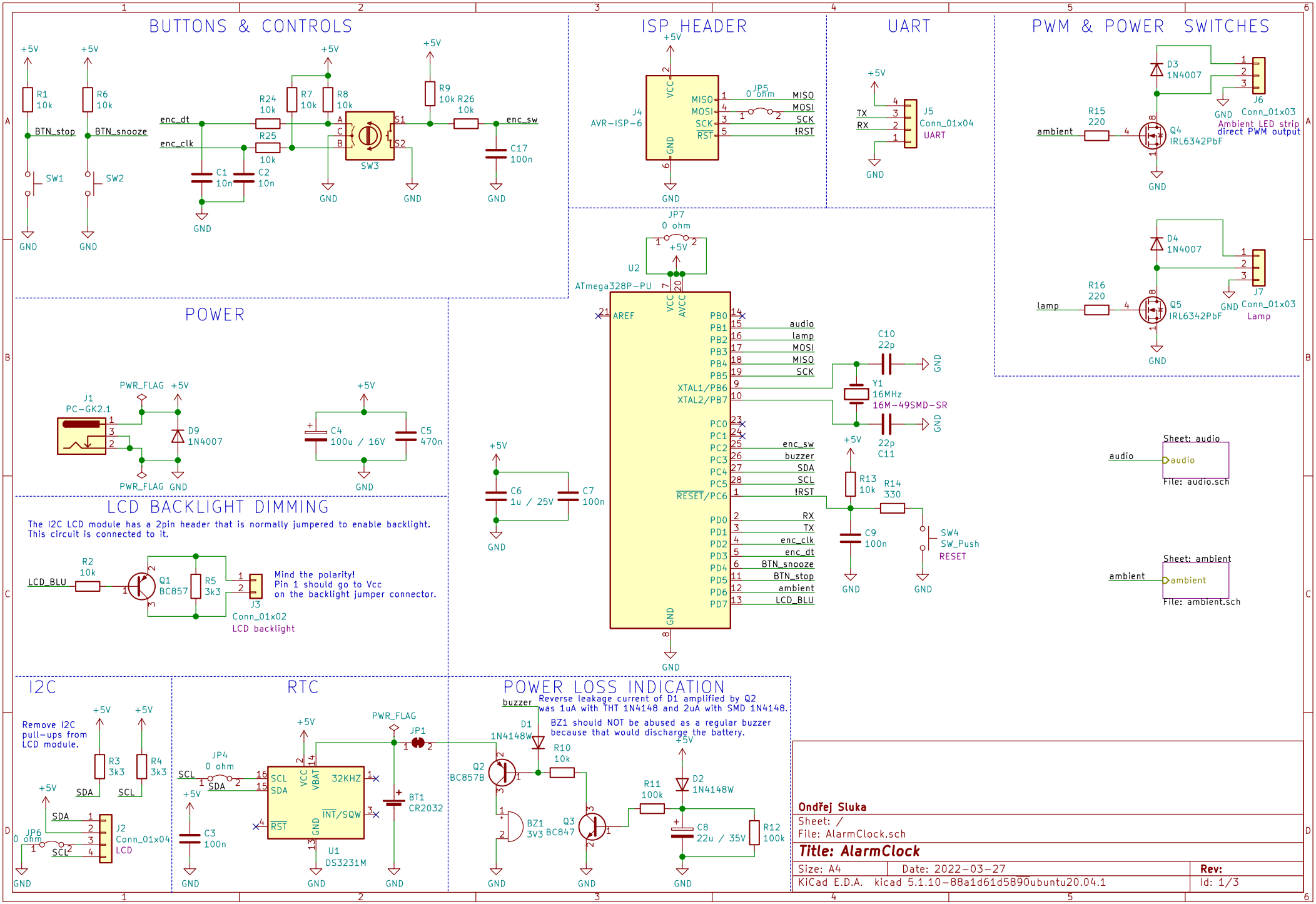
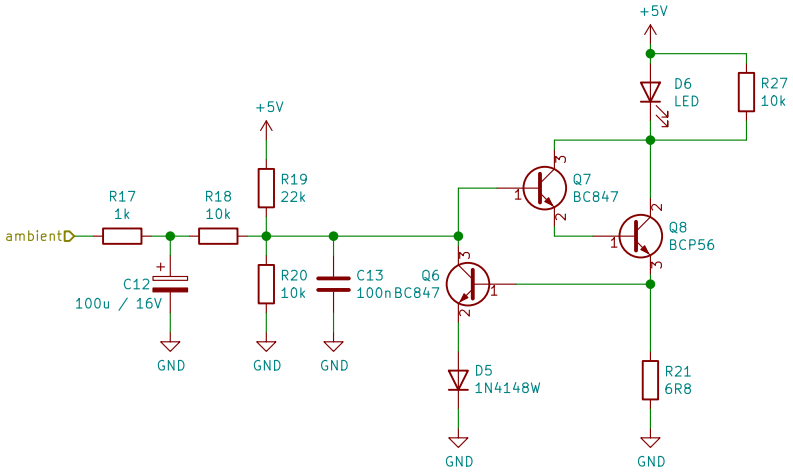
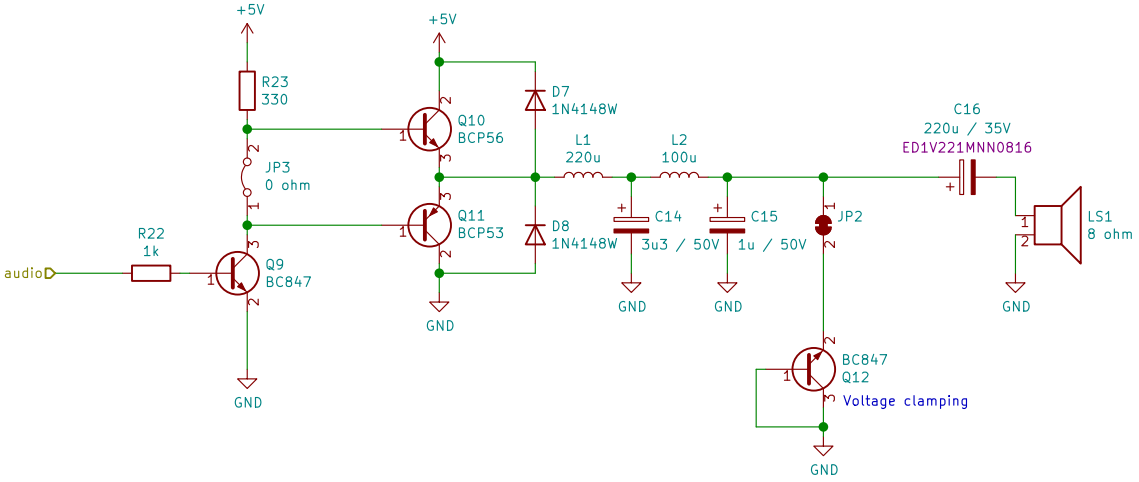

BUTTONS & CONTROLS
ISP HEADER
UART
PWM & POWER SWITCHES
POWER
LCD BACKLIGHT DIMMING
The I2C LCD module has a 2pin header that is normally jumpered to enable backlight.
This circuit is connected to it.
Mind the polarity!
Pin 1 should go to Vcc
on the backlight jumper connector.
I2C
Remove I2C
pull-ups from
LCD module.
RTC
POWER LOSS INDICATION
Reverse leakage current of D1 amplified by Q2
was 1uA with THT 1N4148 and 2uA with SMD 1N4148.
BZ1 should NOT be abused as a regular buzzer
because that would discharge the battery.
Ambient LED strip
direct PWM output
Lamp
Sheet: audio
File: audio.sch
Sheet: ambient
File: ambient.sch
Ondřej Sluka
Sheet: /
File: AlarmClock.sch
Title: AlarmClock
Size: A4
Date: 2022-03-27
Rev:
KiCad E.D.A. kicad 5.1.10-88a1d61d5890ubuntu20.04.1
Id: 1/3



Notes:
– R27 is needed for the LED to fully turn off.

Ondřej Sluka		
Sheet: /ambient/		
File: ambient.sch		
Title: AlarmClock		
Size: A4	Date: 2022-03-27	**Rev:**
KiCad E.D.A. kicad 5.1.10-88a1d61d5890ubuntu20.04.1		Id: 2/3



Notes:
- MLCCs are piezoelectric (even X7R)
- MLCC's capacitance is voltage-dependent.
- Voltage clamping is needed to avoid high voltage spikes at resonant frequencies when speaker is disconnected.
- A BJT can be used for voltage clamping because of the low base-emiter breakdown voltage.
- JP3 is just a 0 ohm jumper for PCB layout.

Ondřej Sluka		
Sheet: /audio/		
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Size: A4	Date: 2022-03-27	**Rev:**
KiCad E.D.A. kicad 5.1.10-88a1d61d5890ubuntu20.04.1		Id: 3/3