

### Revision history

1.4.0-1 (2021-01-14):

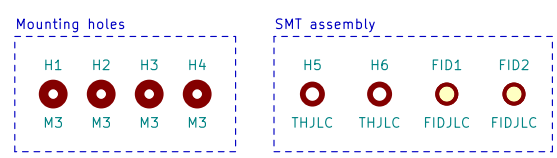
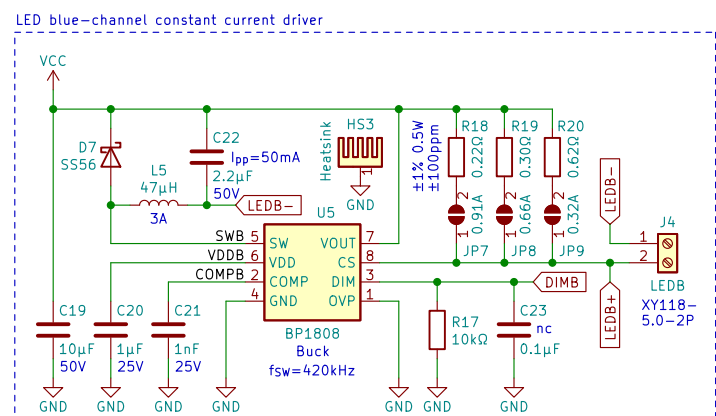
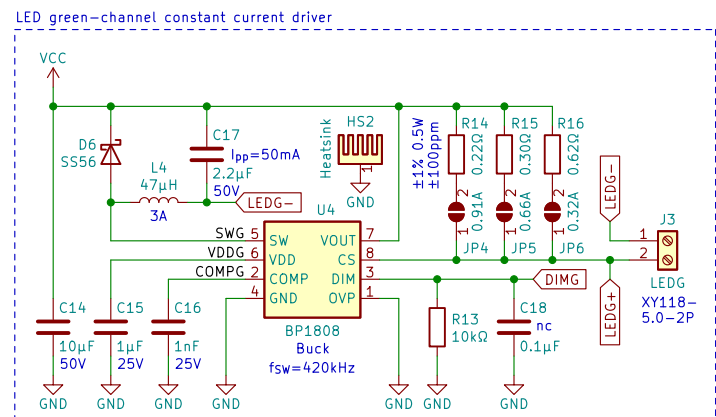
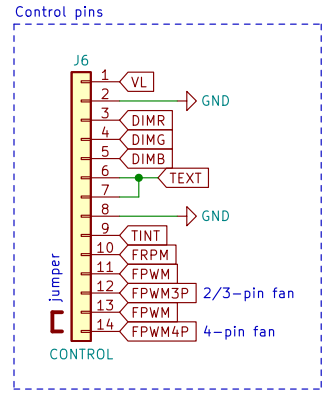
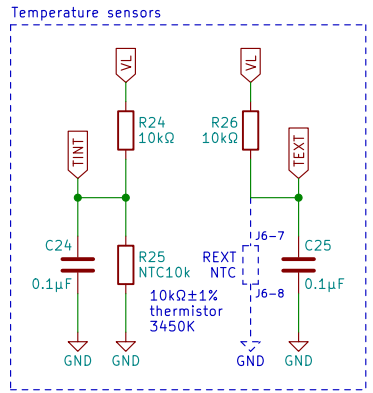
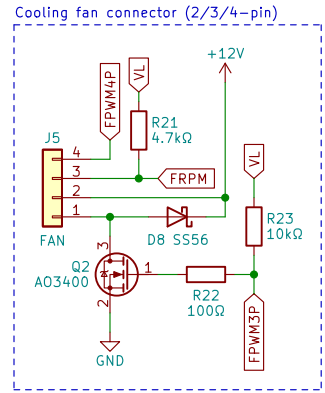
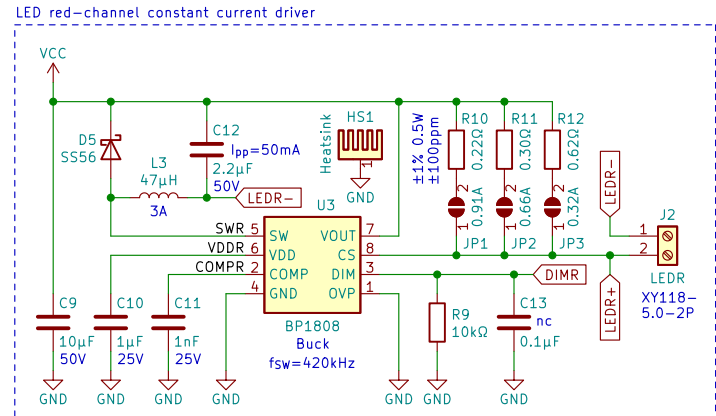
- new schematic and PCB design in KiCad.
- U1 and U2 replaced with a different DC-DC converter to produce +5V/+12V.
- LED driver killswitch (Q2, Q3 and Q4) separated between channels.
- LM35 temperature sensor replaced with NTC thermistors (internal/external).

2.0.0-1 (2022-07-14):

- U3, U4 and U5 LM3404HVMR LED drivers replaced with BP1808.
- analog dimming feature on DIM pin (see Table 4).
- optional heatsinks under BP1808 chip.
- forward current and logic voltage selectable with solder jumpers (see Table 2-3).
- replace all screw terminals with spring clamp terminals.

2.0.0-2 (2022-07-28):

- remove BP1808 CS-pin series resistors (or short with 0Ω).
- add BP1808 DIM-pin capacitor footprints (nc).



RGB LED and power supply options			
PLED [W]	Vr [V]	Ir [A]	Power supply
3	R:2-2.4 G:3-3.4 B:3-3.4	0.32/ch	Mean Well RS-15-15 P=15W V=15V I=1A
10	R:6-7 G:9-11 B:9-11	0.32/ch	Mean Well LRS-35-15 P=35W V=15V I=2.4A
20	R:12-14 G:18-21 B:18-21	0.32/ch	Mean Well LRS-50-24 P=50W V=24V I=2.2A
30	R:20-24 G:30-34 B:30-34	0.32/ch	Mean Well LRS-50-36 P=50W V=36V I=1.45A
50	R:16-18 G:24-27 B:24-27	0.66/ch	Mean Well LRS-100-36 P=100W V=36V I=2.8A
100	R:22-26 G:33-37 B:33-37	0.91/ch	Mean Well LRS-150-36 P=150W V=36V I=4.3A VADMAX=39.6V

Table 1.

LED forward current solder jumpers			
JP1 JP4 JP7	JP2 JP5 JP8	JP3 JP6 JP9	If [A]
		x	0.32
	x		0.66
x			0.91
	x	x	1.00
x	x		1.23
x	x	x	1.57
x	x	x	1.90

Table 2.

Logic voltage solder jumpers			
JP10	JP11	VL [V]	
1-2	1-2	3.3	
2-3	2-3	5.0	

Table 3.

DIM pin voltage	
Vdim [V]	Mode
0.00-0.19	Shutdown t <sub>delay</sub> =15ms
0.20-0.54	Standby I <sub>f</sub> =0A
0.55-1.74	Analog DIM I <sub>f</sub> =0-100%
1.75-5.50	PWM DIM I <sub>f</sub> =0-100%

Table 4.

**High-Power RGB-LED Driver**  
 Buck | P=3-100W | V<sub>in</sub>=15-40V | V<sub>r</sub>=2-34V | I<sub>r</sub>=0.32-1.90A/channel  
 Part number: BC-006200-BP1808  
 Boundary Condition  
<https://boundarycondition.home.blog/>  
 Sheet: /  
 File: HighPowerRGBLEDDriver\_V200.kicad\_sch  
 Author: Daniel Laszlo  
 Size: A3 | Date: 2022-07-28 | Rev: 2.0.0-2  
 KiCad E.D.A. kicad (6.0.6) | Page: 1/1

