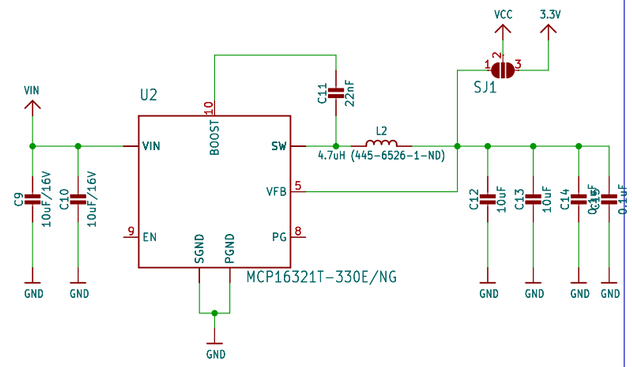
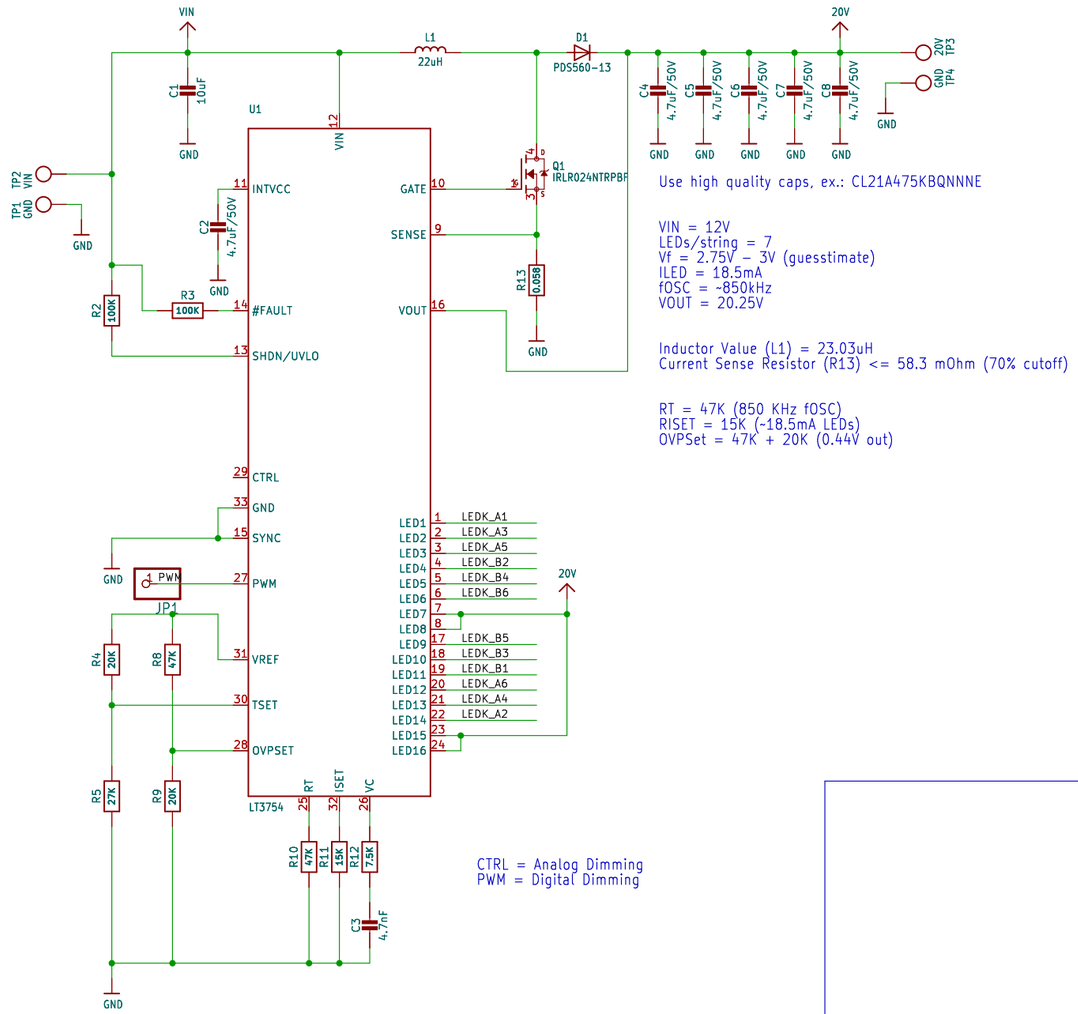
3.3V Buck Converter

SJ1 Select buck or displayport for 3V3



20V Boost Converter



Use high quality caps, ex.: CL21A475KBQNNNE

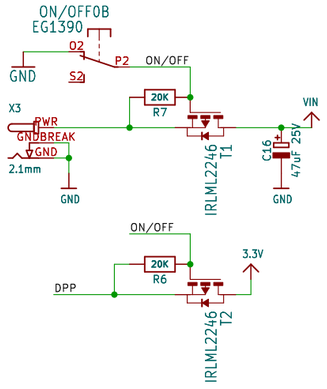
VIN = 12V
LEDs/string = 7
Vf = 2.75V – 3V (guesstimate)
ILED = 18.5mA
fOSC = ~850kHz
VOUT = 20.25V

Inductor Value (L1) = 23.03uH
Current Sense Resistor (R13) <= 58.3 mOhm (70% cutoff)

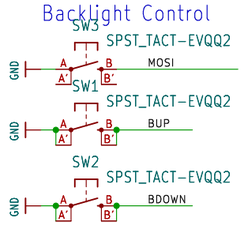
RT = 47K (850 KHz fOSC)
RISET = 15K (~18.5mA LEDs)
OVPSet = 47K + 20K (0.44V out)

CTRL = Analog Dimming
PWM = Digital Dimming

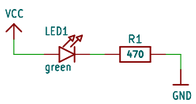
On/Off Switch



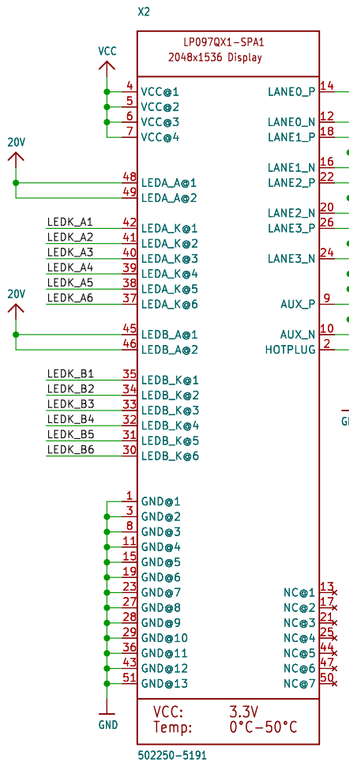
Backlight Control



Power Indicator



Retina Display and DisplayPort Connector

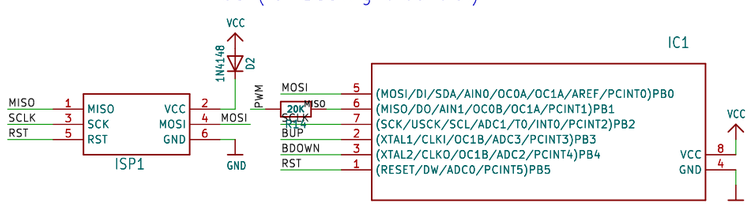


Note: Sink side pinout used

Lanes are targetted at 85 Ohm differential (+/–15%)
Avoid discontinuities in the reference plane
DP_PWR normally not connected

DisplayPort Layout Notes:
http://www.nxp.com/documents/application_note/AN10798.pdf

MCU (for Backlight Control)



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