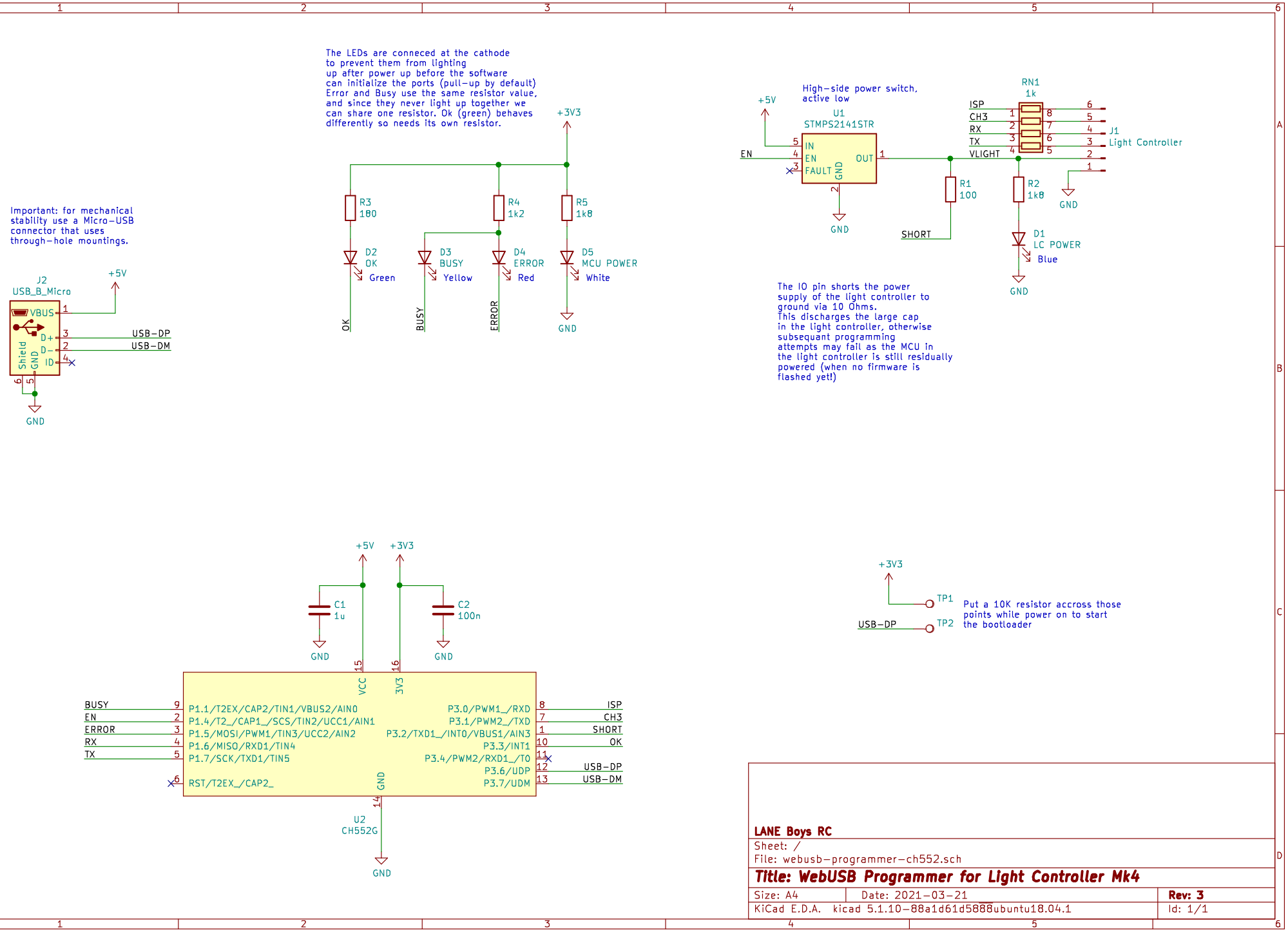
The LEDs are conneced at the cathode
to prevent them from lighting
up after power up before the software
can initialize the ports (pull-up by default)
Error and Busy use the same resistor value,
and since they never light up together we
can share one resistor. Ok (green) behaves
differently so needs its own resistor.
+3V3
R3
180
R4
1k2
R5
1k8
D2
OK
Green
D3
BUSY
Yellow
D4
ERROR
Red
D5
MCU POWER
White
OK
BUSY
ERROR
GND
Important: for mechanical
stability use a Micro-USB
connector that uses
through-hole mountings.
J2
USB_B_Micro
+5V
VBUS
D+
D-
ID
Shield
GND
USB-DP
USB-DM
GND
High-side power switch,
active low
U1
STMPS2141STR
+5V
IN
EN
FAULT
OUT
GND
EN
GND
R1
100
SHORT
RN1
1k
ISP
CH3
RX
TX
VLIGHT
J1
Light Controller
GND
R2
1k8
D1
LC POWER
Blue
GND
The IO pin shorts the power
supply of the light controller to
ground via 10 Ohms.
This discharges the large cap
in the light controller, otherwise
subsequant programming
attempts may fail as the MCU in
the light controller is still residually
powered (when no firmware is
flashed yet!)
+5V
+3V3
C1
1u
C2
100n
GND
GND
VCC
3V3
BUSY
EN
ERROR
RX
TX
RST/T2EX_/CAP2_
P1.1/T2EX/CAP2/TIN1/VBUS2/AIN0
P1.4/T2_/CAP1_/SCS/TIN2/UCC1/AIN1
P1.5/MOSI/PWM1/TIN3/UCC2/AIN2
P1.6/MISO/RXD1/TIN4
P1.7/SCK/TXD1/TIN5
P3.0/PWM1_/RXD
P3.1/PWM2_/TXD
P3.2/TXD1_/INT0/VBUS1/AIN3
P3.3/INT1
P3.4/PWM2/RXD1_/T0
P3.6/UDP
P3.7/UDM
GND
ISP
CH3
SHORT
OK
USB-DP
USB-DM
U2
CH552G
GND
+3V3
TP1
USB-DP
TP2
Put a 10K resistor accross those
points while power on to start
the bootloader
LANE Boys RC
Sheet: /
File: webusb-programmer-ch552.sch
Title: WebUSB Programmer for Light Controller Mk4
Size: A4
Date: 2021-03-21
Rev: 3
KiCad E.D.A. kicad 5.1.10-88a1d61d5888ubuntu18.04.1
Id: 1/1