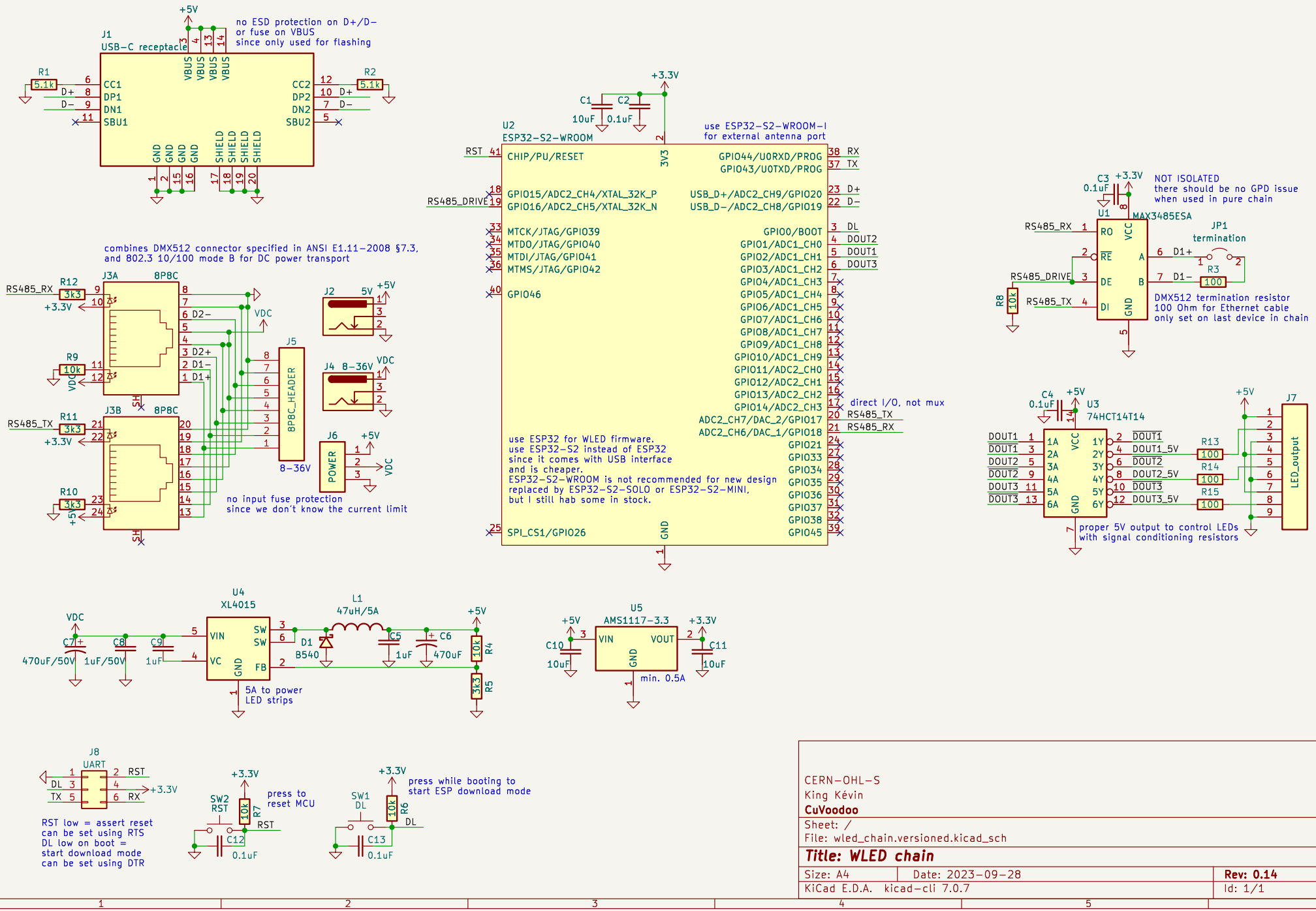
J1
USB-C receptacle
no ESD protection on D+/D-
or fuse on VBUS
since only used for flashing
R1 5.1k
R2 5.1k
CC1
DP1
DN1
SBU1
CC2
DP2
DN2
SBU2
VBUS
GND
SHIELD
U2
ESP32-S2-WROOM
use ESP32-S2-WROOM-I
for external antenna port
C1 10uF
C2 0.1uF
CHIP/PU/RESET
GPIO15/ADC2_CH4/XTAL_32K_P
GPIO16/ADC2_CH5/XTAL_32K_N
MTCK/JTAG/GPIO39
MTDO/JTAG/GPIO40
MTDI/JTAG/GPIO41
MTMS/JTAG/GPIO42
GPIO46
SPI_CS1/GPIO26
GPIO44/U0RXD/PROG
GPIO43/U0TXD/PROG
USB_D+/ADC2_CH9/GPIO20
USB_D-/ADC2_CH8/GPIO19
GPIO0/BOOT
GPIO1/ADC1_CH0
GPIO2/ADC1_CH1
GPIO3/ADC1_CH2
GPIO4/ADC1_CH3
GPIO5/ADC1_CH4
GPIO6/ADC1_CH5
GPIO7/ADC1_CH6
GPIO8/ADC1_CH7
GPIO9/ADC1_CH8
GPIO10/ADC1_CH9
GPIO11/ADC2_CH0
GPIO12/ADC2_CH1
GPIO13/ADC2_CH2
GPIO14/ADC2_CH3
ADC2_CH7/DAC_2/GPIO17
ADC2_CH6/DAC_1/GPIO18
GPIO21
GPIO33
GPIO34
GPIO35
GPIO36
GPIO37
GPIO38
GPIO45
direct I/O, not mux
use ESP32 for WLED firmware.
use ESP32-S2 instead of ESP32
since it comes with USB interface
and is cheaper.
ESP32-S2-WROOM is not recommended for new design
replaced by ESP32-S2-SOLO or ESP32-S2-MINI,
but I still hab some in stock.
combines DMX512 connector specified in ANSI E1.11-2008 §7.3,
and 802.3 10/100 mode B for DC power transport
J3A 8P8C
J3B 8P8C
8P8C_HEADER
J5
8-36V
J2 5V
J4 8-36V
J6 POWER
no input fuse protection
since we don't know the current limit
U1 MAX3485ESA
C3 0.1uF
NOT ISOLATED
there should be no GPD issue
when used in pure chain
JP1
termination
R3 100
DMX512 termination resistor
100 Ohm for Ethernet cable
only set on last device in chain
U3 74HCT14T14
C4 0.1uF
J7
LED_output
R13 100
R14 100
R15 100
proper 5V output to control LEDs
with signal conditioning resistors
U4 XL4015
L1 47uH/5A
D1 B540
C7 470uF/50V
C8 1uF/50V
C9 1uF
C5 1uF
C6 470uF
5A to power
LED strips
U5 AMS1117-3.3
C10 10uF
C11 10uF
min. 0.5A
J8 UART
RST low = assert reset
can be set using RTS
DL low on boot =
start download mode
can be set using DTR
SW2 RST
press to
reset MCU
C12 0.1uF
SW1 DL
press while booting to
start ESP download mode
C13 0.1uF
CERN-OHL-S
King Kévin
CuVoodoo
Sheet: /
File: wled_chain.versioned.kicad_sch
Title: WLED chain
Size: A4
Date: 2023-09-28
Rev: 0.14
KiCad E.D.A. kicad-cli 7.0.7
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