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File: holiday-widget.kicad_sch

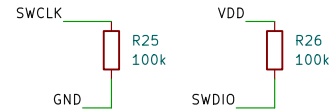
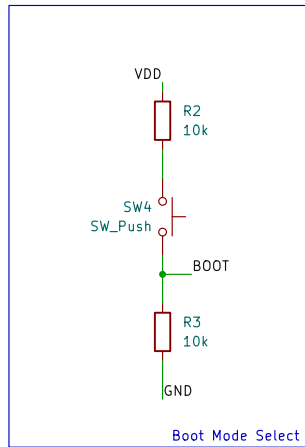
Title: Holiday Widget

Size: A4 Date: 2024-05-15

KiCad E.D.A. 8.0.2

Rev: 1.0

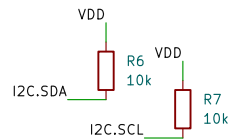
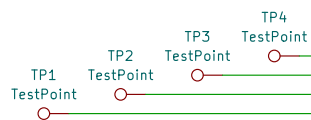
Id: 1/7



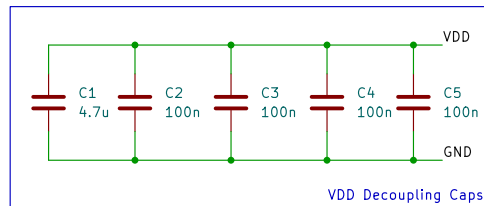
Pullup/down for SWD

TODO crystal or any other provisions?

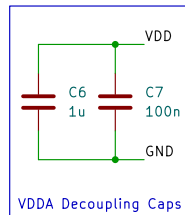
AUDIO_IND
VCNL4020_INTD
LIS3DH_INTD



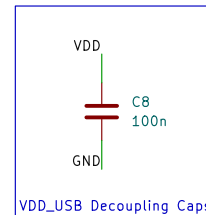
I2C Pullup Resistors



VDD Decoupling Caps

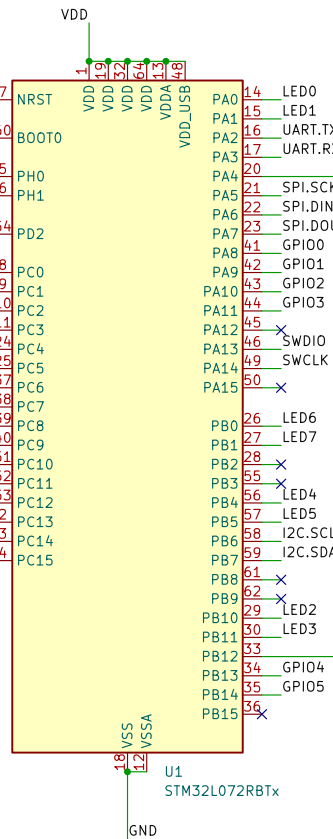


VDDA Decoupling Caps



VDD_USB Decoupling Caps

Capacitors specified in AN4467. C1 and C6 can be tantalum. No provision for VDD_USB, so just added another 100nF.



VDD
GND
nRST

SWDIO
SWCLK

LED0
LED1
LED2
LED3
LED4
LED5
LED6
LED7

SPI_SCK
SPI_DIN
SPI_DOUT

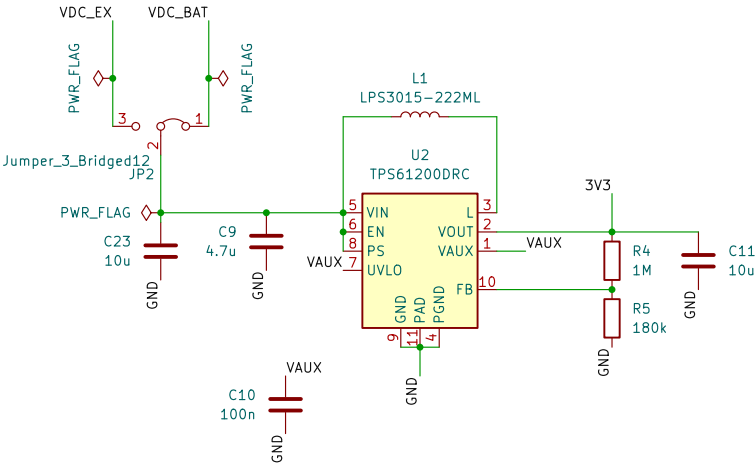
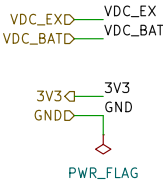
UART_TX
UART_RX

I2C_SCL
I2C_SDA

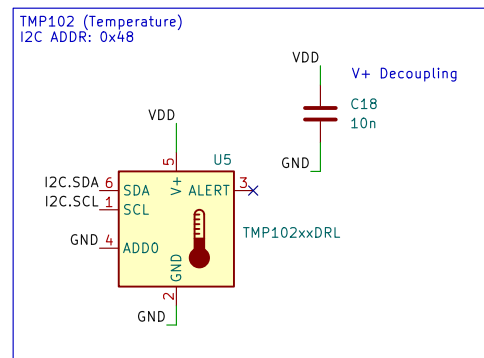
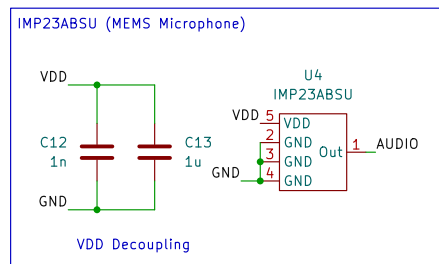
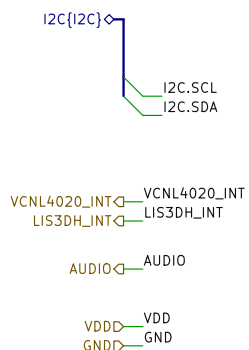
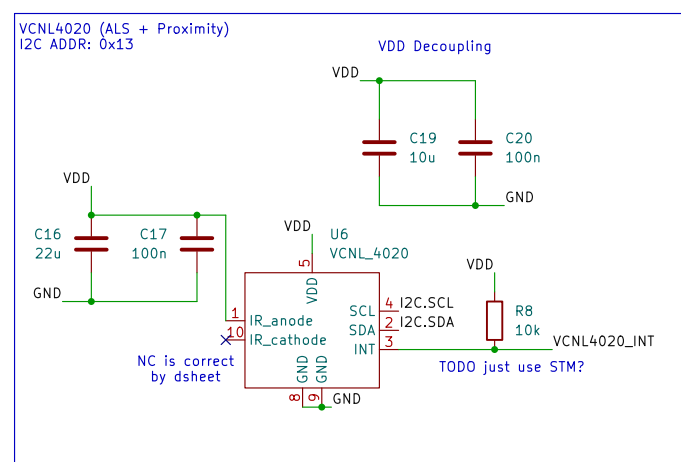
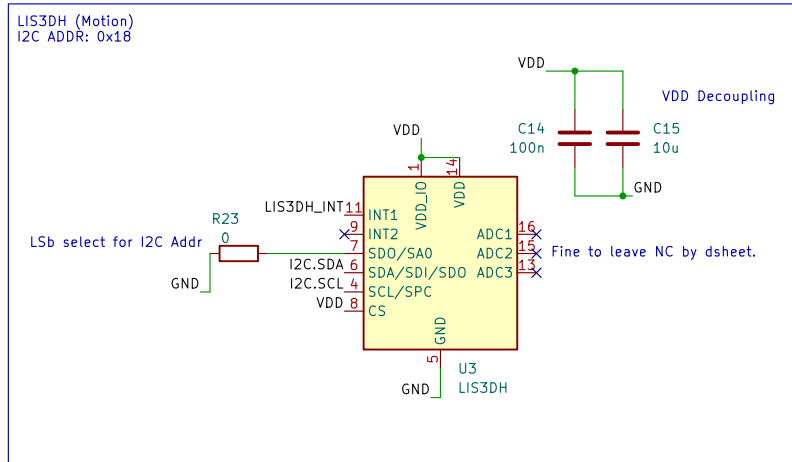
GPIO0
GPIO1
GPIO2
GPIO3
GPIO4
GPIO5
GPIO6
GPIO7

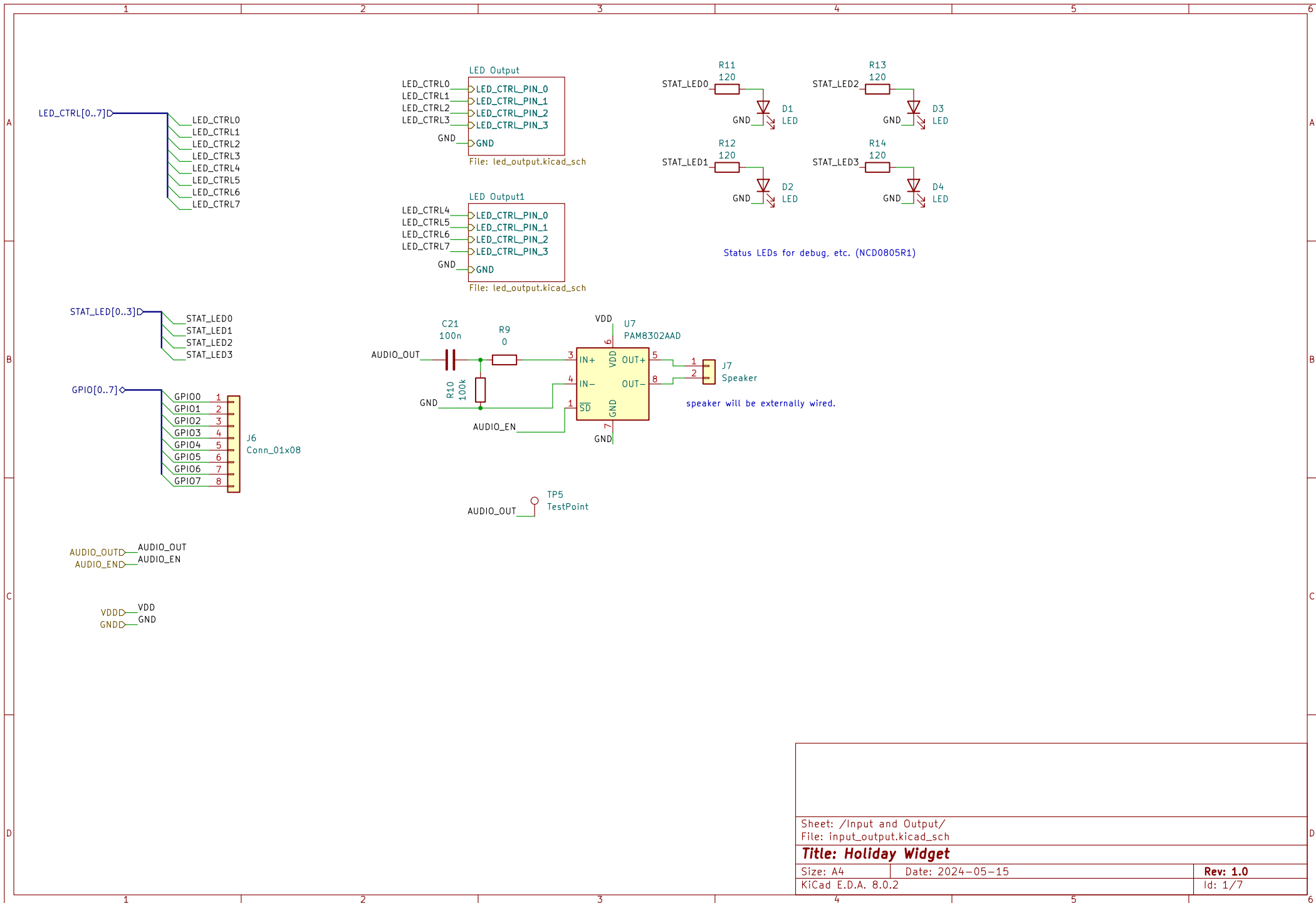
STAT_LED0
STAT_LED1
STAT_LED2
STAT_LED3

Sheet: /mcu/ File: mcu.kicad_sch	
Title: Holiday Widget	
Size: A4	Date: 2024-05-15
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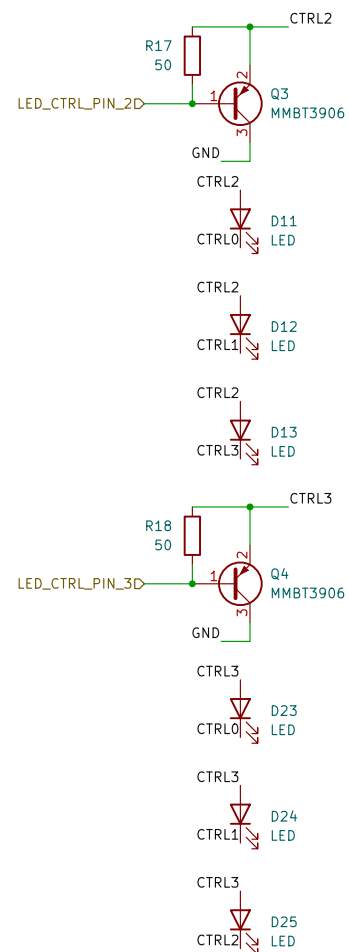
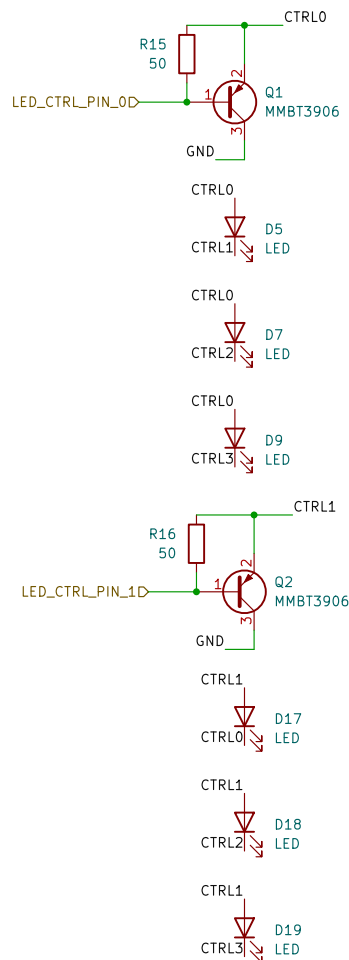
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File: power.kicad_sch	
Title: Holiday Widget	
Size: A4	Date: 2024-05-15
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Id: 3/7	





PNP VBE(min)=0.65V, and as long as the LEDs chosen have a diode drop 1.9V or higher, the resistor will limit current out of each pin to 15mA (which is the max allowed). May want to increase resistance for safety. Will use larg(er) package resistors on control pins for adjustment if desired.

GND



Chiplexing circuit source:
<https://www.edn.com/chiplexing-efficiently-drives-multiple-leds-using-few-microcontroller-ports/>

Sheet: /Input and Output/LED Output/
File: led_output.kicad_sch

Title: Holiday Widget

Size: A4 Date: 2024-05-15

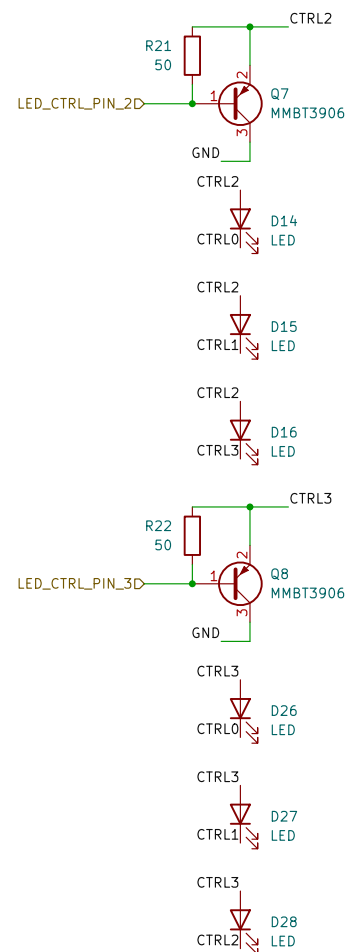
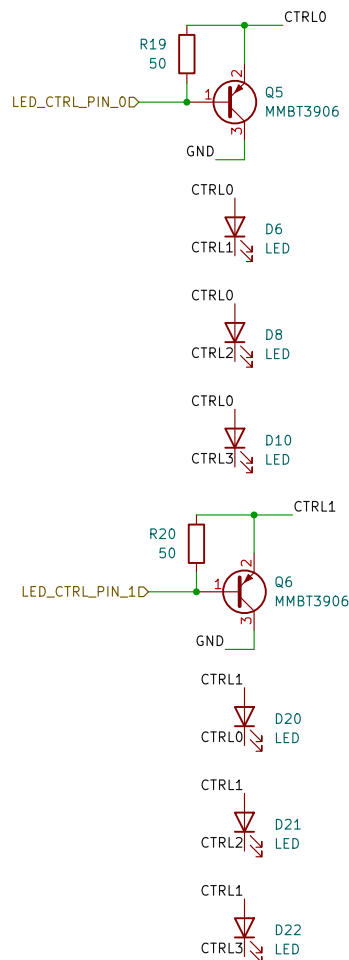
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Rev: 1.0

Id: 0/7

PNP VBE(min)=0.65V, and as long as the LEDs chosen have a diode drop 1.9V or higher, the resistor will limit current out of each pin to 15mA (which is the max allowed). May want to increase resistance for safety. Will use larg(er) package resistors on control pins for adjustment if desired.

GND



Chiplexing circuit source:
<https://www.edn.com/chiplexing-efficiently-drives-multiple-leds-using-few-microcontroller-ports/>

Sheet: /Input and Output/LED Output1/
File: led_output.kicad_sch

Title: Holiday Widget

Size: A4 Date: 2024-05-15

KiCad E.D.A. 8.0.2

Rev: 1.0

Id: 7/7