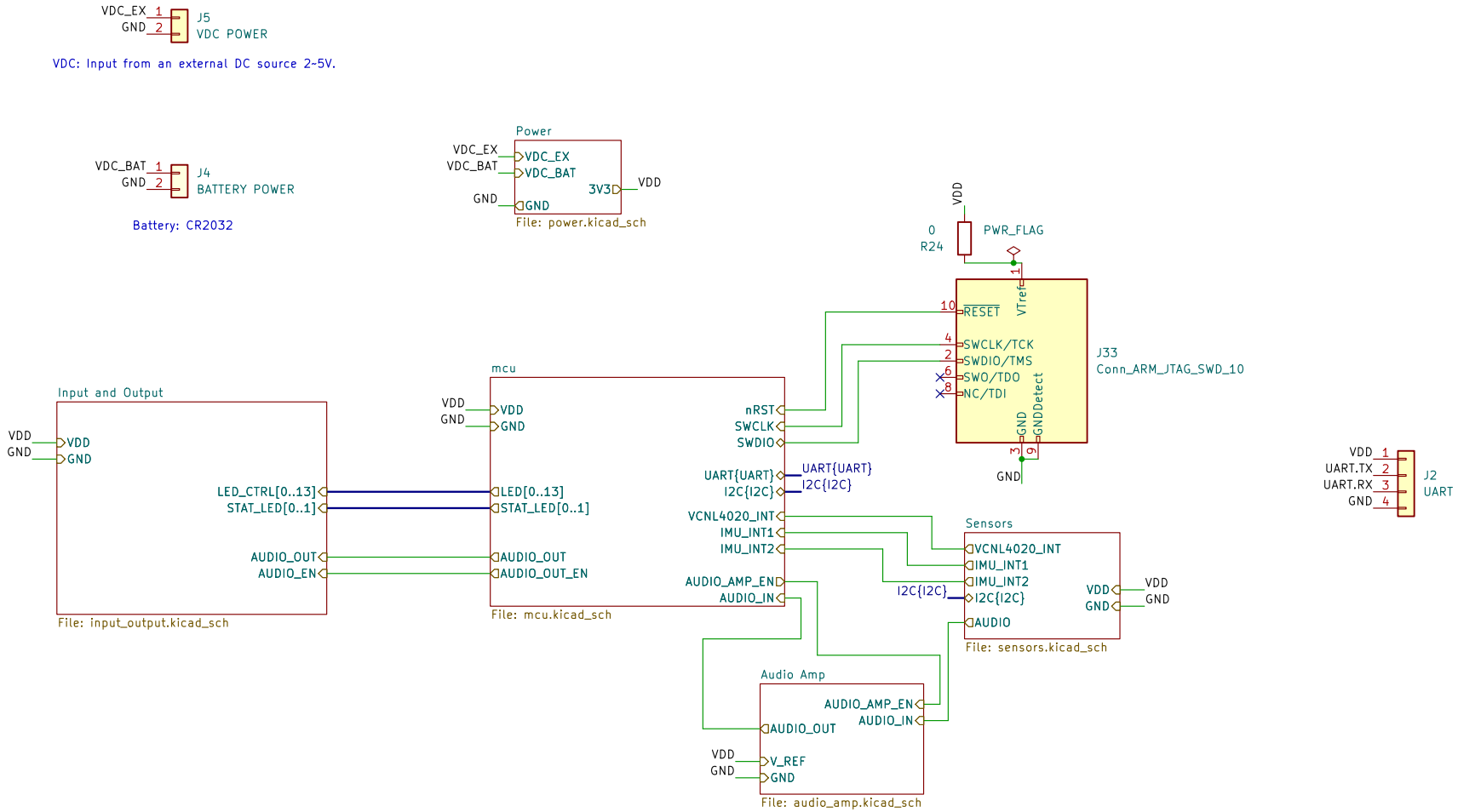
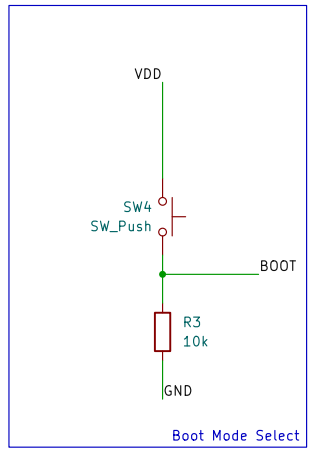
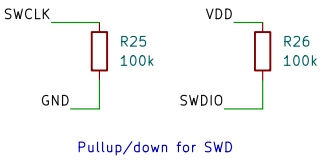
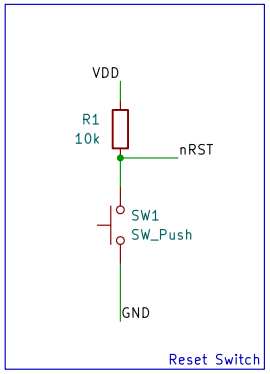
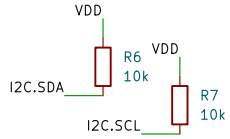

VDC_EX 1
GND 2
J5
VDC POWER
VDC: Input from an external DC source 2-5V.
VDC_BAT 1
GND 2
J4
BATTERY POWER
Battery: CR2032
Power
VDC_EX
VDC_BAT
GND
VDC_EX
VDC_BAT
GND
3V3
VDD
File: power.kicad_sch
VDD
0
R24
PWR_FLAG
1
VTref
10
RESET
4
SWCLK/TCK
2
SWDIO/TMS
6
SWO/TDO
8
NC/TDI
GND
GNDDetect
3
9
J33
Conn_ARM_JTAG_SWD_10
GND
Input and Output
VDD
GND
VDD
GND
LED_CTRL[0..13]
STAT_LED[0..1]
AUDIO_OUT
AUDIO_EN
File: input_output.kicad_sch
mcu
VDD
GND
VDD
GND
LED[0..13]
STAT_LED[0..1]
AUDIO_OUT
AUDIO_OUT_EN
nRST
SWCLK
SWDIO
UART{UART}
I2C{I2C}
UART{UART}
I2C{I2C}
VCNL4020_INT
IMU_INT1
IMU_INT2
AUDIO_AMP_EN
AUDIO_IN
File: mcu.kicad_sch
Sensors
VCNL4020_INT
IMU_INT1
IMU_INT2
I2C{I2C}
AUDIO
I2C{I2C}
VDD
GND
VDD
GND
File: sensors.kicad_sch
Audio Amp
AUDIO_AMP_EN
AUDIO_IN
AUDIO_OUT
VDD
GND
V_REF
GND
File: audio_amp.kicad_sch
VDD 1
UART.TX 2
UART.RX 3
GND 4
J2
UART
Sheet: /
File: holiday-widget.kicad_sch
Title: Holiday Widget
Size: A4
Date: 2024-05-15
Rev: 1.0
KiCad E.D.A. 8.0.3
Id: 1/9



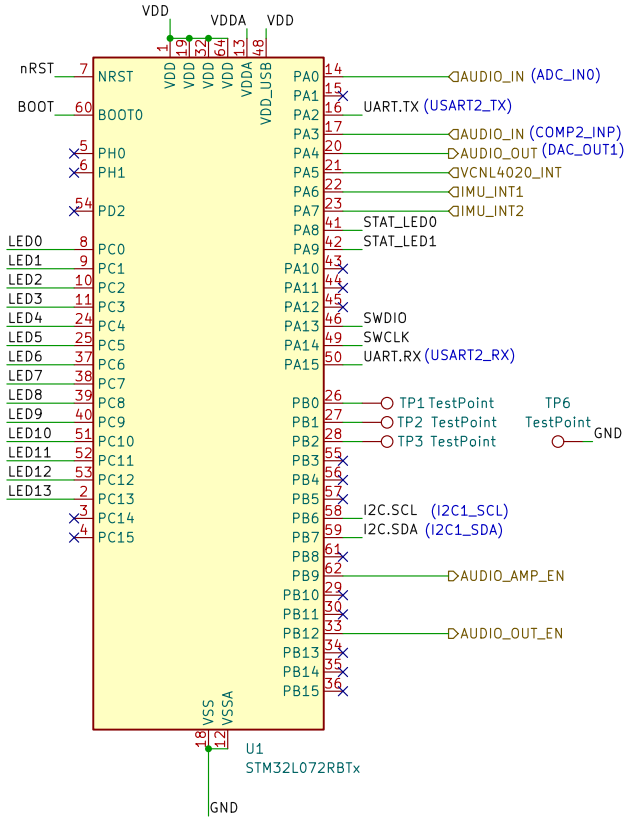


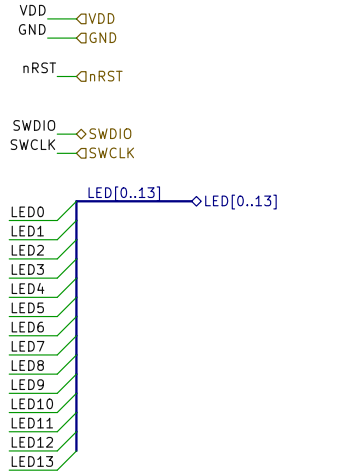
Pullup/down for SWD

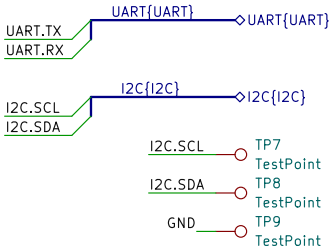


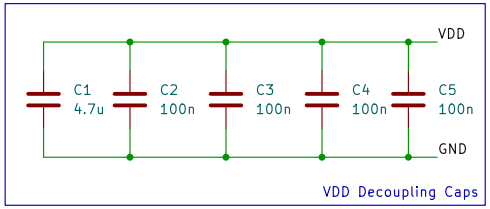


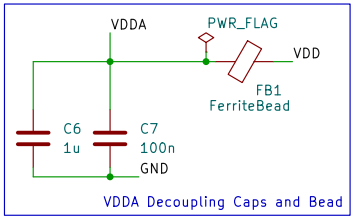
I2C Pullup Resistors

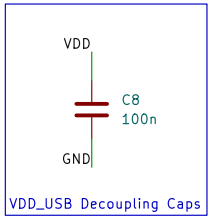










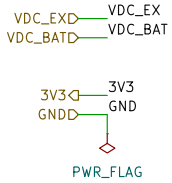


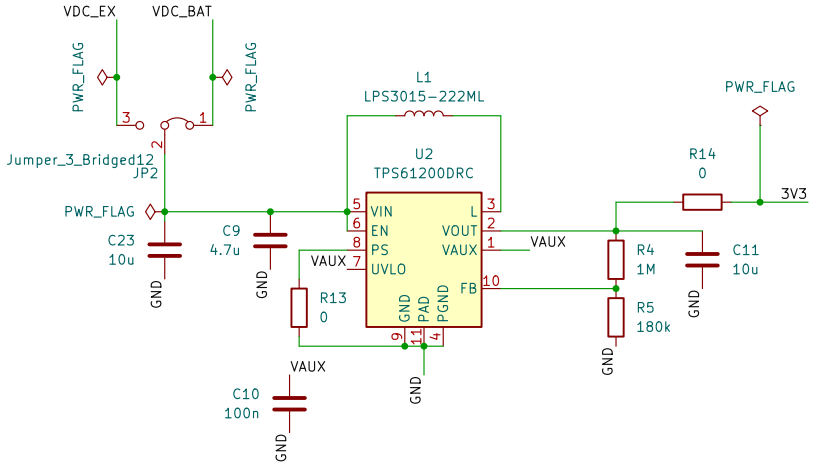
Capacitors specified in AN4467. No provision for VDD_USB, so just added another 100nF.

Sheet: /mcu/
File: mcu.kicad_sch

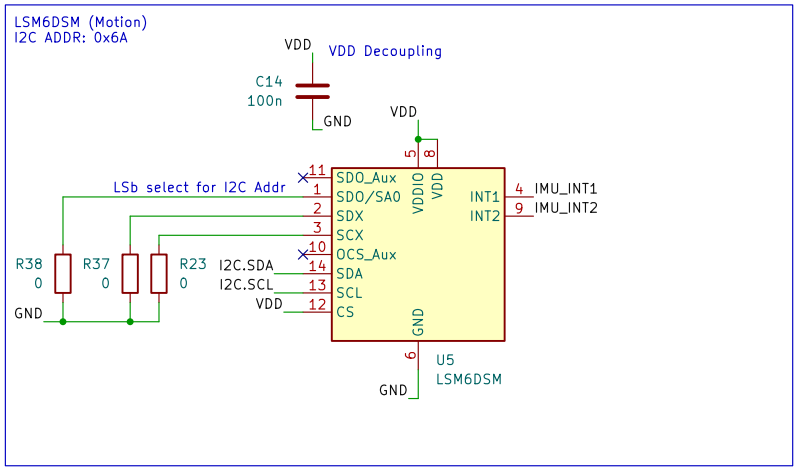
Title: Holiday Widget

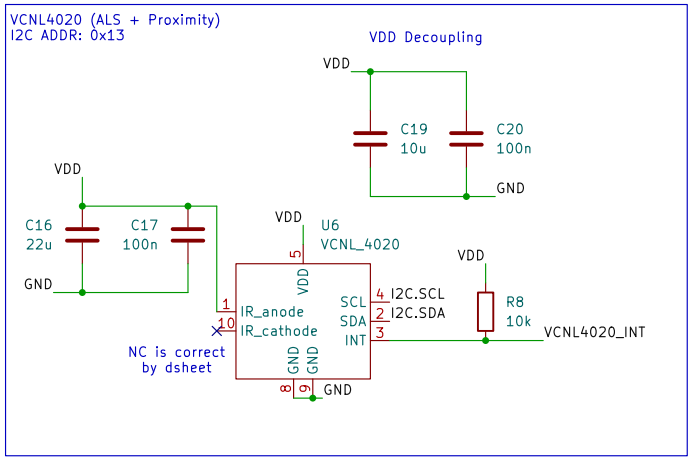
Size: A4	Date: 2024-05-15	**Rev: 1.0**
KiCad E.D.A. 8.0.3		Id: 2/9

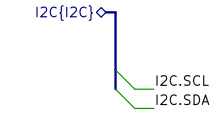


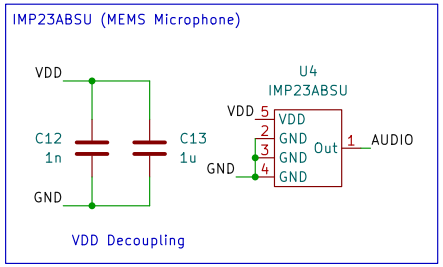


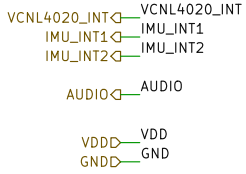
Sheet: /Power/		
File: power.kicad_sch		
Title: Holiday Widget		
Size: A4	Date: 2024-05-15	**Rev: 1.0**
KiCad E.D.A. 8.0.3		Id: 3/9











Sheet: /Sensors/		
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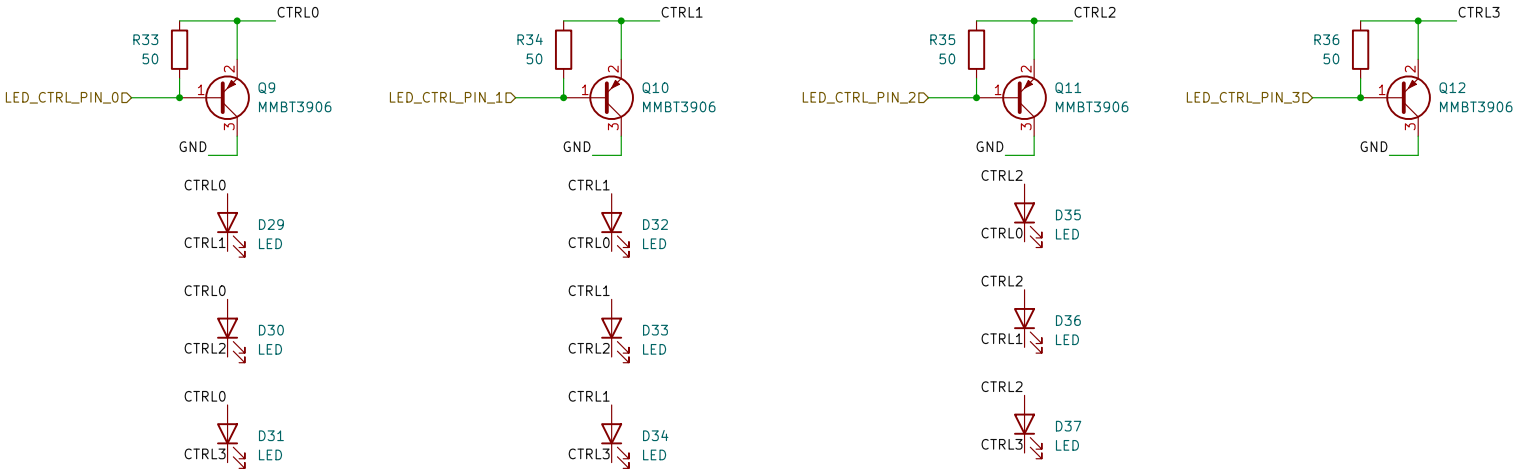
Title: Holiday Widget		
Size: A4	Date: 2024-05-15	**Rev: 1.0**
KiCad E.D.A. 8.0.3		Id: 4/9

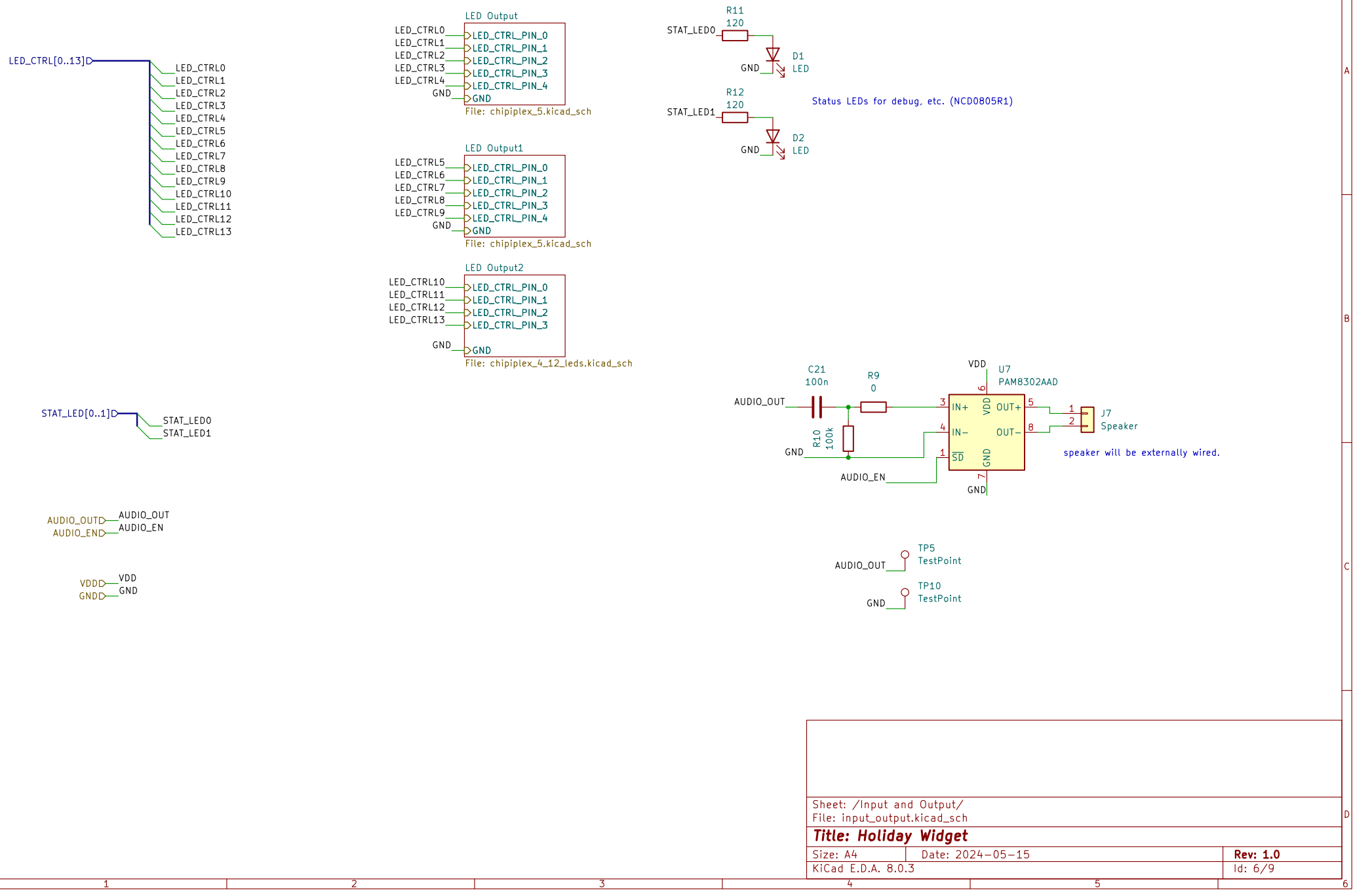
PNP VBE(min)=0.65V, and as long as the LEDs chosen have a diode drop 1.9V or higher, the resistor will limit current out of each pin to 15mA (which is the max allowed). May want to increase resistance for safety. Will use larg(er) package resistors on control pins for adjustment if desired.



GND GND

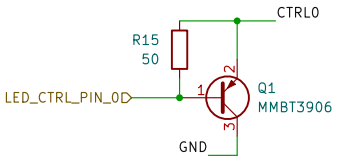
Chipiplexing circuit source:
https://www.edn.com/chipiplexing-efficiently-drives-multiple-leds-using-few-microcontroller-ports/

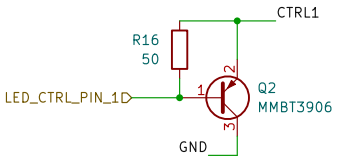
Sheet: /Input and Output/LED Output2/		
File: chipiplex_4_12_leds.kicad_sch		
Title: Holiday Widget		
Size: A4	Date: 2024-05-15	**Rev: 1.0**
KiCad E.D.A. 8.0.3		Id: 5/9

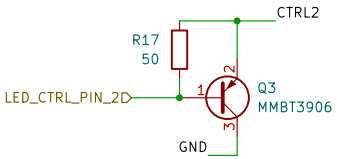


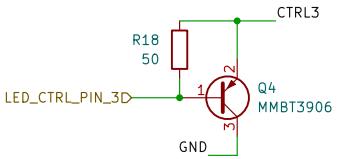
Sheet: /Input and Output/		
File: input_output.kicad_sch		
Title: Holiday Widget		
Size: A4	Date: 2024-05-15	**Rev: 1.0**
KiCad E.D.A. 8.0.3		Id: 6/9

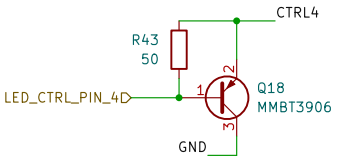
PNP VBE(min)=0.65V, and as long as the LEDs chosen have a diode drop 1.9V or higher, the resistor will limit current out of each pin to 15mA (which is the max allowed). May want to increase resistance for safety. Will use larg(er) package resistors on control pins for adjustment if desired.

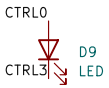


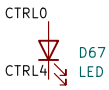


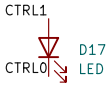


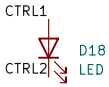


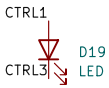


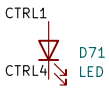


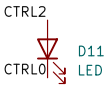


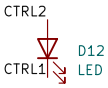


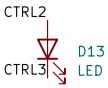


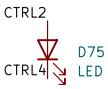


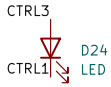


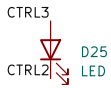


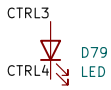


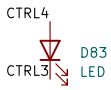












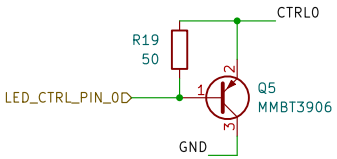
Chipiplexing circuit source:
https://www.edn.com/chipiplexing-efficiently-drives-multiple-leds-using-few-microcontroller-ports/

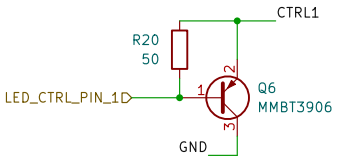
Sheet: /Input and Output/LED Output/
File: chipiplex_5.kicad_sch

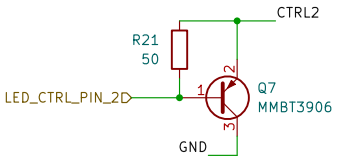
Title: Holiday Widget

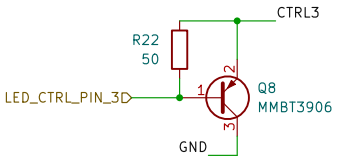
Size: A4	Date: 2024-05-15	**Rev: 1.0**
KiCad E.D.A. 8.0.3		Id: 7/9

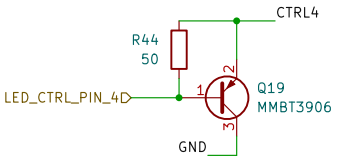
PNP VBE(min)=0.65V, and as long as the LEDs chosen have a diode drop 1.9V or higher, the resistor will limit current out of each pin to 15mA (which is the max allowed). May want to increase resistance for safety. Will use larg(er) package resistors on control pins for adjustment if desired.

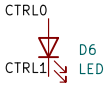


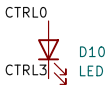


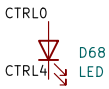


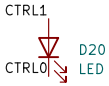


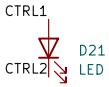


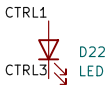


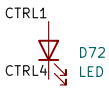


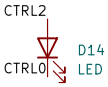


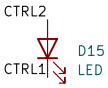


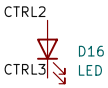


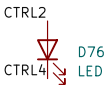


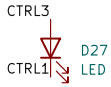


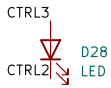


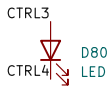


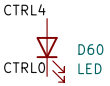


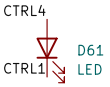


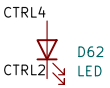


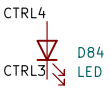












Chipiplexing circuit source:
https://www.edn.com/chipiplexing-efficiently-drives-multiple-leds-using-few-microcontroller-ports/

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Size: A4	Date: 2024-05-15	**Rev: 1.0**
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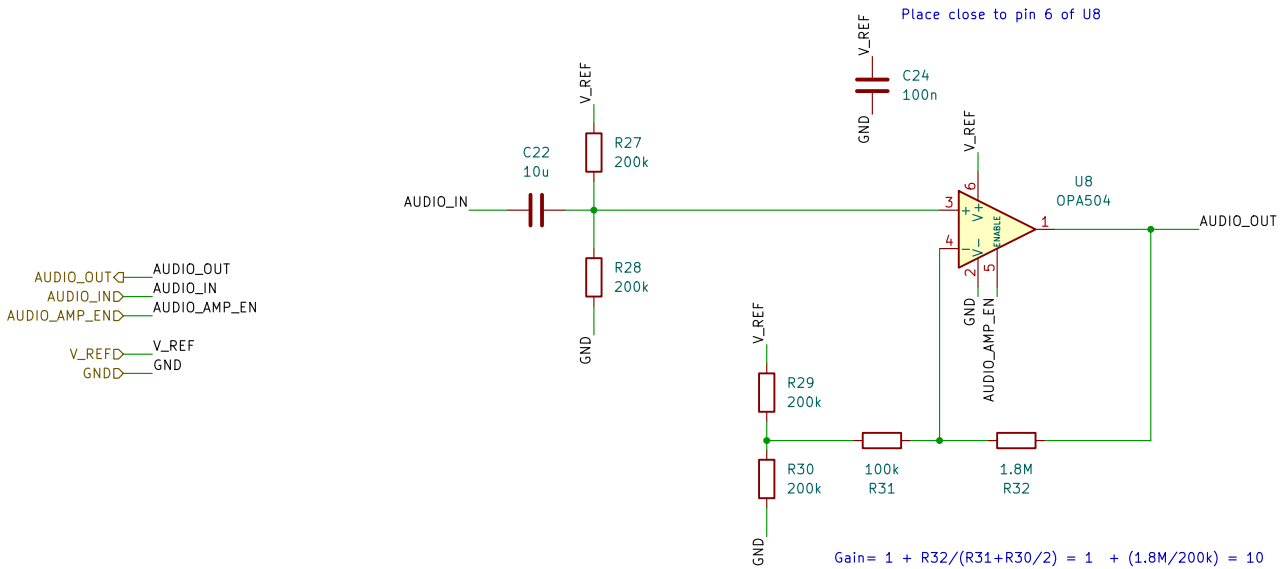

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