

Mycroft Mark 2 rev 6

SJ201-Raspberry Pi 4 Daughterboard

Sheet: xmos

XMOS
Microphone
Array

File: xmos.sch

I2S & I2C

I2S

Sheet: Power

Power

File: Power.sch

Sheet: RaspberryPi

Raspberry Pi

File: RaspberryPi.sch

Sheet: AudioAmp

Audio Amplifier

File: AudioAmp.sch

I2S & I2C

USB

I2C

MIPI DSI
Connector

Sheet: Monitor

Monitor,
Touch

File: monitor.sch

Sheet: MCU

MCU & Fan

File: MCU.sch

Sheet: Coral Processor

Coral
Processor

File: Coral.sch

Logos & Mounting Holes



OpenHardware1

SJ-201-R6

Mycroft AI

Sheet: /

File: SJ-201-R6.sch

Title: SJ-201-R6

Size: A

Date: 2021-01-27

Rev: **Rev6 - v2**

KiCad E.D.A. kicad (5.1.9)-1

Id: 1/8

Typical Application Circuit

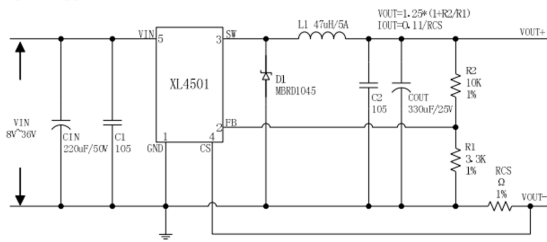
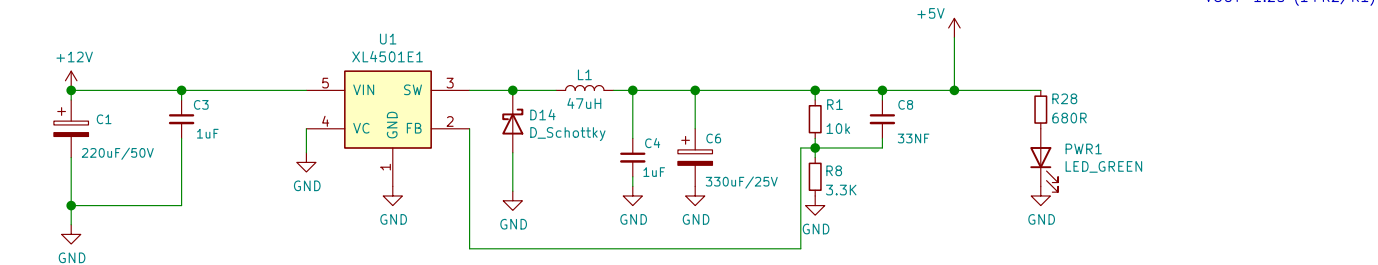


Figure4. XL4501 Typical Application Circuit

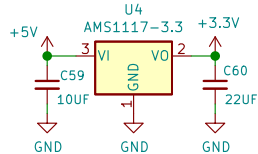
Reference Diagram

VIN=8V ~ 16V, VOUT=5V/5A



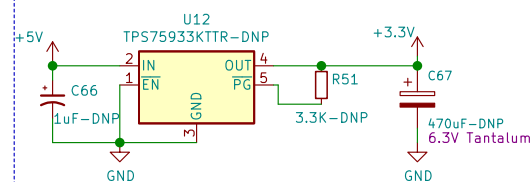
FB Resistor
 $VOUT=1.25*(1+R2/R1)$

3.3v LDO Regulator

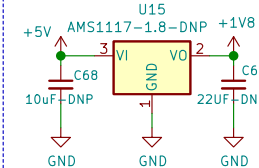


LDO to power on PCB stuff,
instead of using Raspberry 3.3v
Enables USB operation

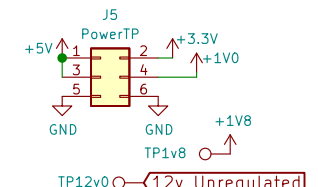
3.3v LDO High Power for Coral TPU



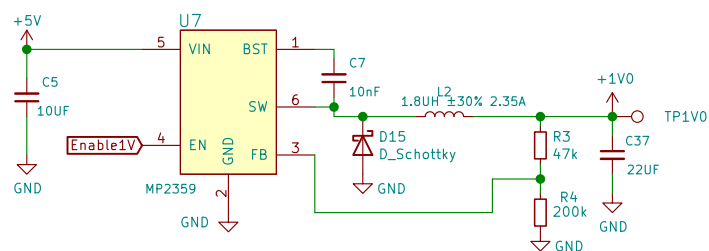
1.8v LDO Regulator



Power Test Points



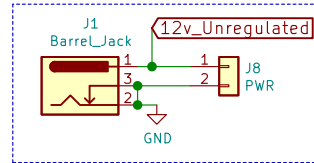
1.0v Buck for XM05



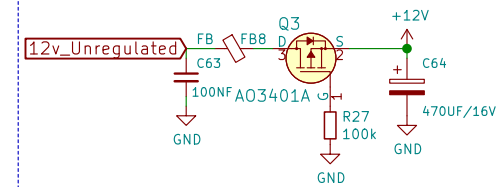
$$VFB = 0.6V$$

$$VO = 0.6 \times (1 + 30/47) = 0.98V$$

Power



Reverse Polarity Protection



SJ-201-R6

Mycroft AI

Sheet: /Power/
File: Power.sch

Title: Power

Size: A Date: 2021-01-27

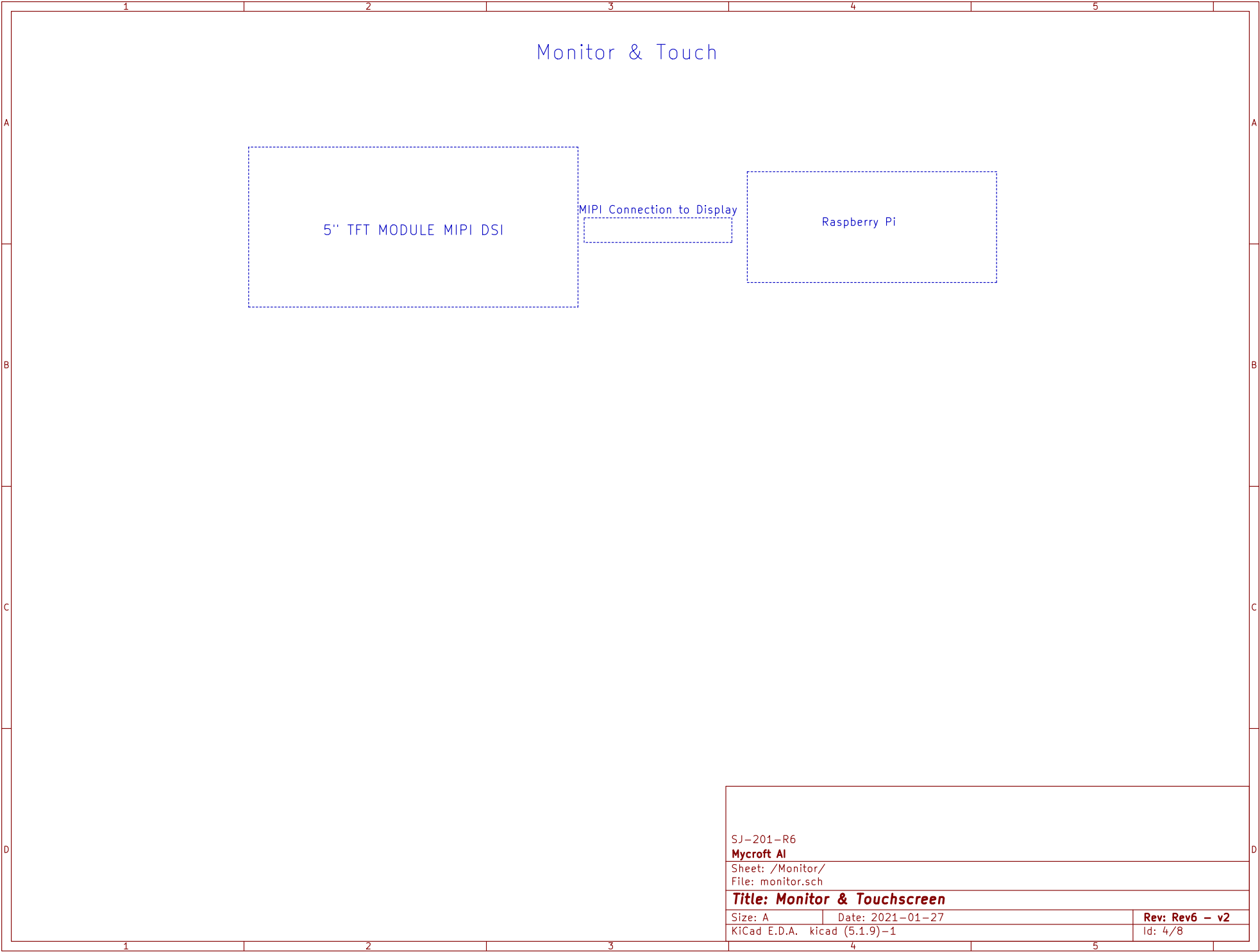
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|---------------------------------------|------------------|----------------|
| SJ-201-R6 | | |
| Mycroft AI | | |
| Sheet: /Monitor/ File: monitor.sch | | |
| Title: Monitor & Touchscreen | | |
| Size: A | Date: 2021-01-27 | Rev: Rev6 - v2 |
| KiCad E.D.A. kicad (5.1.9)-1 | | Id: 4/8 |

Raspberry Pi Connector

+5V J6

5V 3V3 Raspberry_Pi_4

UART_TXD_PI 8 GPIO14/TXD ID_SD/GPIO0 27 GPIO00

UART_RXD_PI 10 GPIO15/RXD ID_SC/GPIO1 28 GPIO01

Enable1V 36 GPIO16 SDA/GPIO2 3 SDA_PI

TPU_RST_L_33 14 GPIO17 SCL/GPIO3 5 SCL_PI

I2S_BCLK_PI 12 GPIO18/PWM0 GCLK0/GPIO4 7 I2S_MCLK_PI

I2S_WS_PI 35 GPIO19/MISO1 GCLK1/GPIO5 29 R19 GPIO05

I2S_DIN_PI 38 GPIO20/MOSI1 GCLK2/GPIO6 31 470R TAS_Fault

I2S_DOUT_PI 40 GPIO21/SCLK1 CE1/GPIO7 26 ATtinyRESET

GPIO22 15 GPIO22 CE0/GPIO8 24 SPI_CS_n

R13 16 GPIO23 MIS00/GPIO9 24 SPI_MISO

R14 18 GPIO24 MOSI0/GPIO10 19 SPI_MOSI

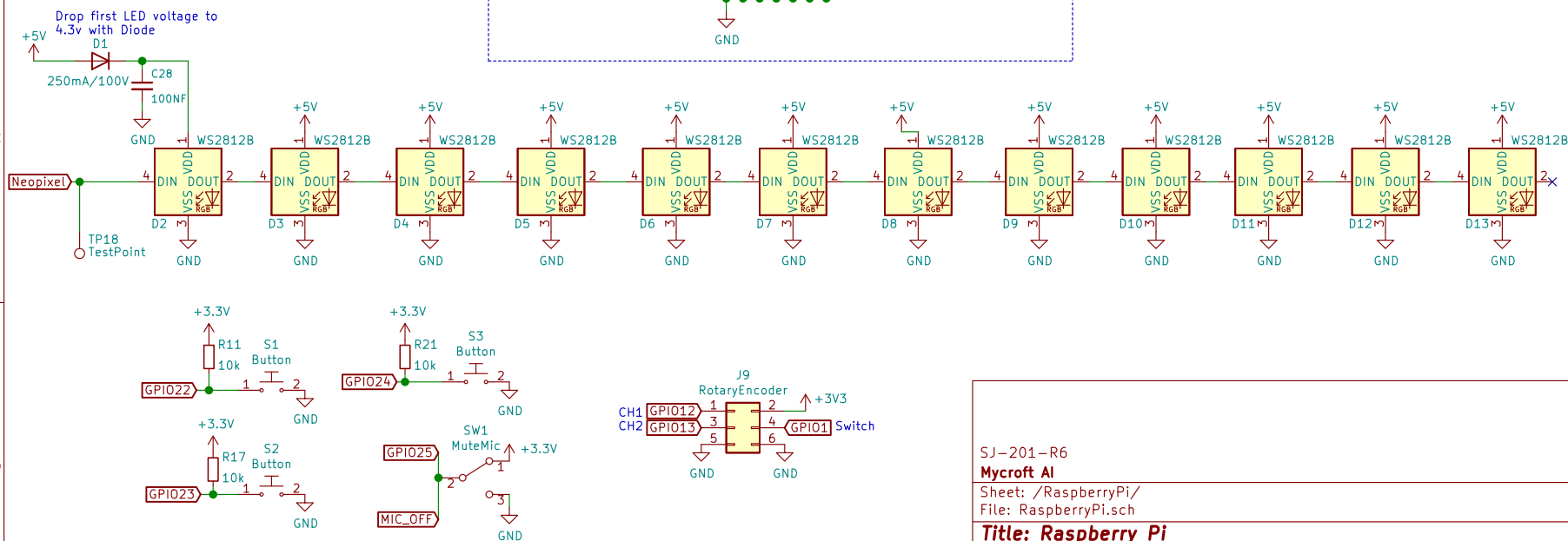
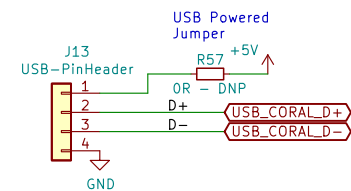
R15 22 GPIO25 SCLK0/GPIO11 23 SPI_CLK

GPIO25 23 GPIO25

Boot_Set 37 GPIO26 PWM0/GPIO12 32 GPIO12

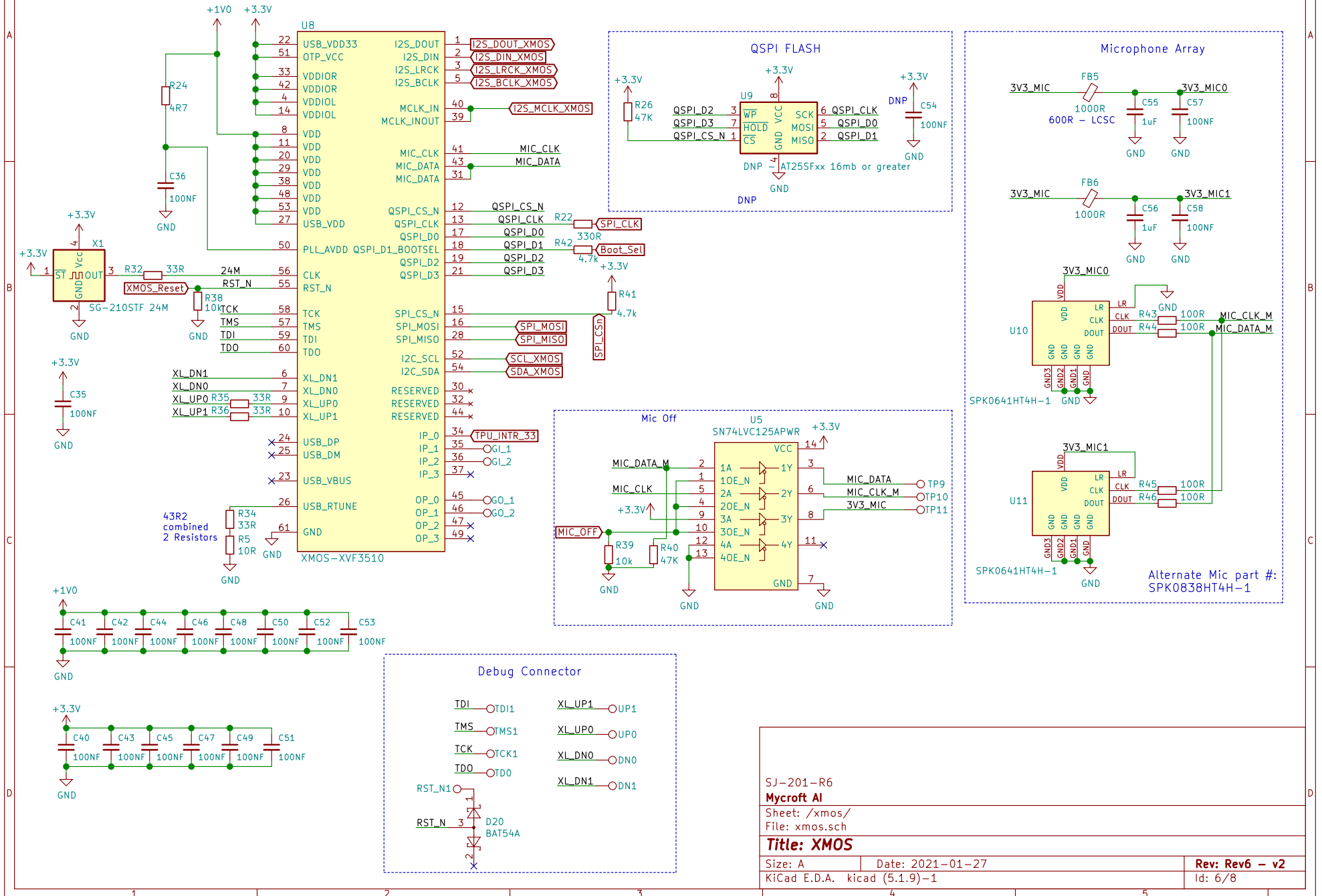
XMOS_Reset 13 GPIO27 PWM1/GPIO13 33 GPIO13

GND 6 GND 4 GND 2 GND 25 GND 30 GND 35 GND



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XMOS Audio Processor



SJ-201-R6

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Sheet: /xmos/

File: xmos.sch

Title: XMOS

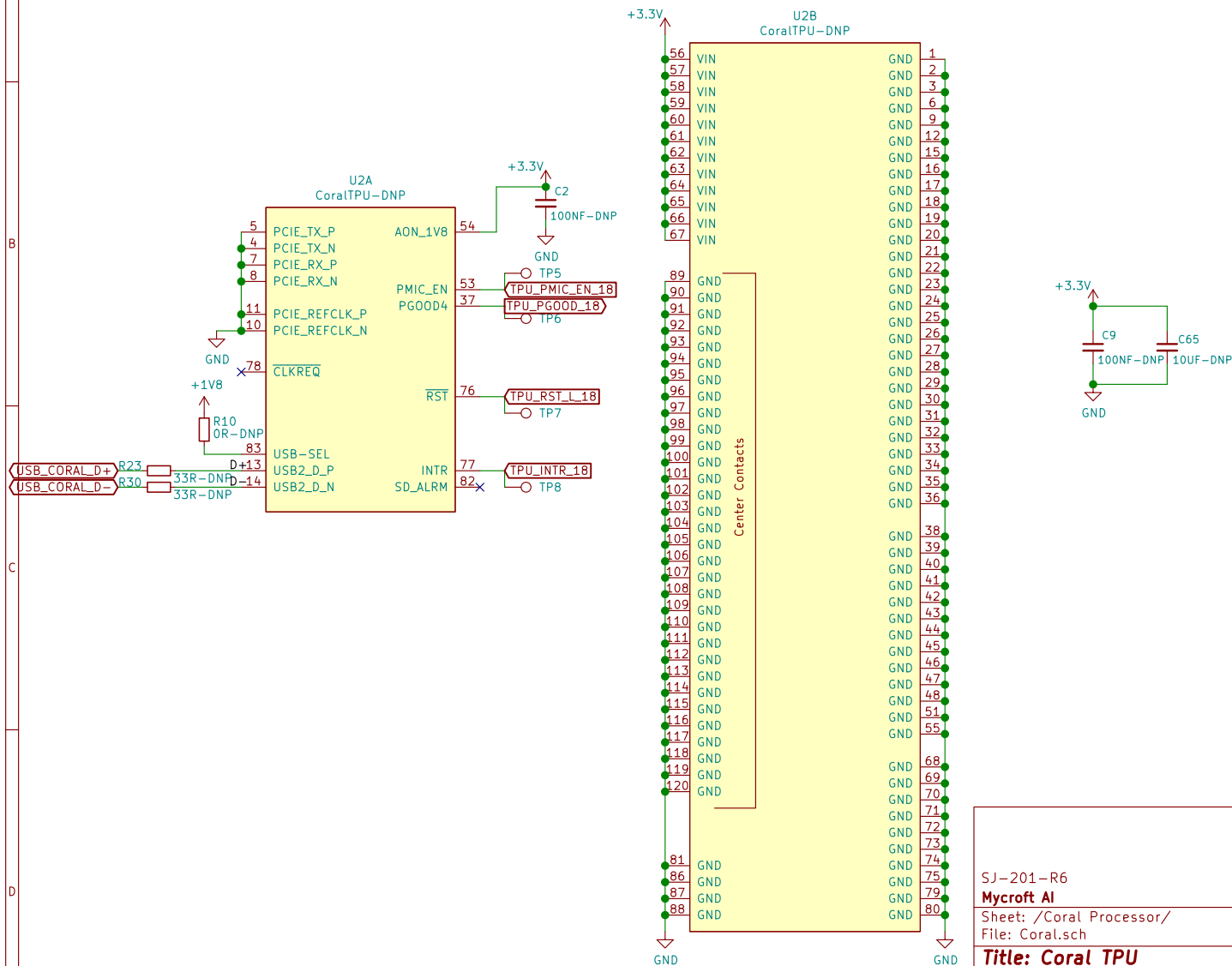
Size: A Date: 2021-01-27

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Coral Processor



SJ-201-R6

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Sheet: /Coral Processor/
File: Coral.sch

Title: Coral TPU

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