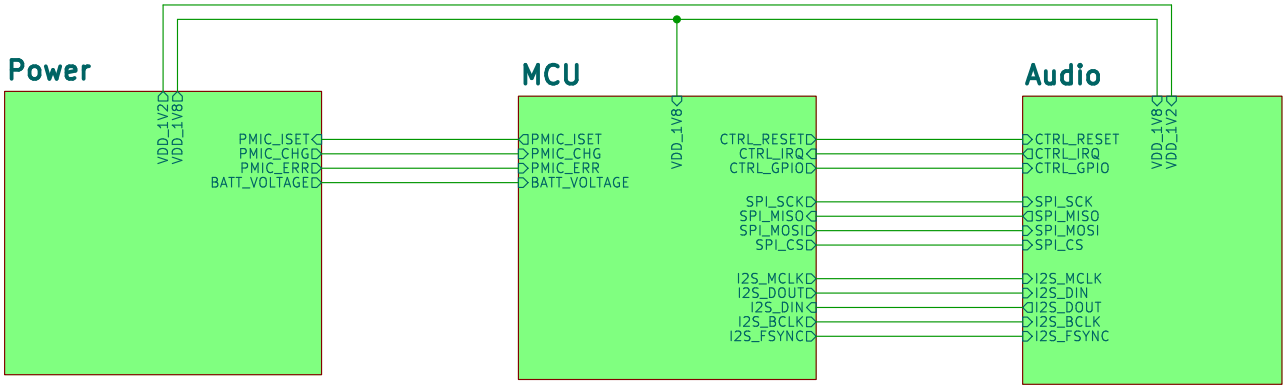
Hearing Aid

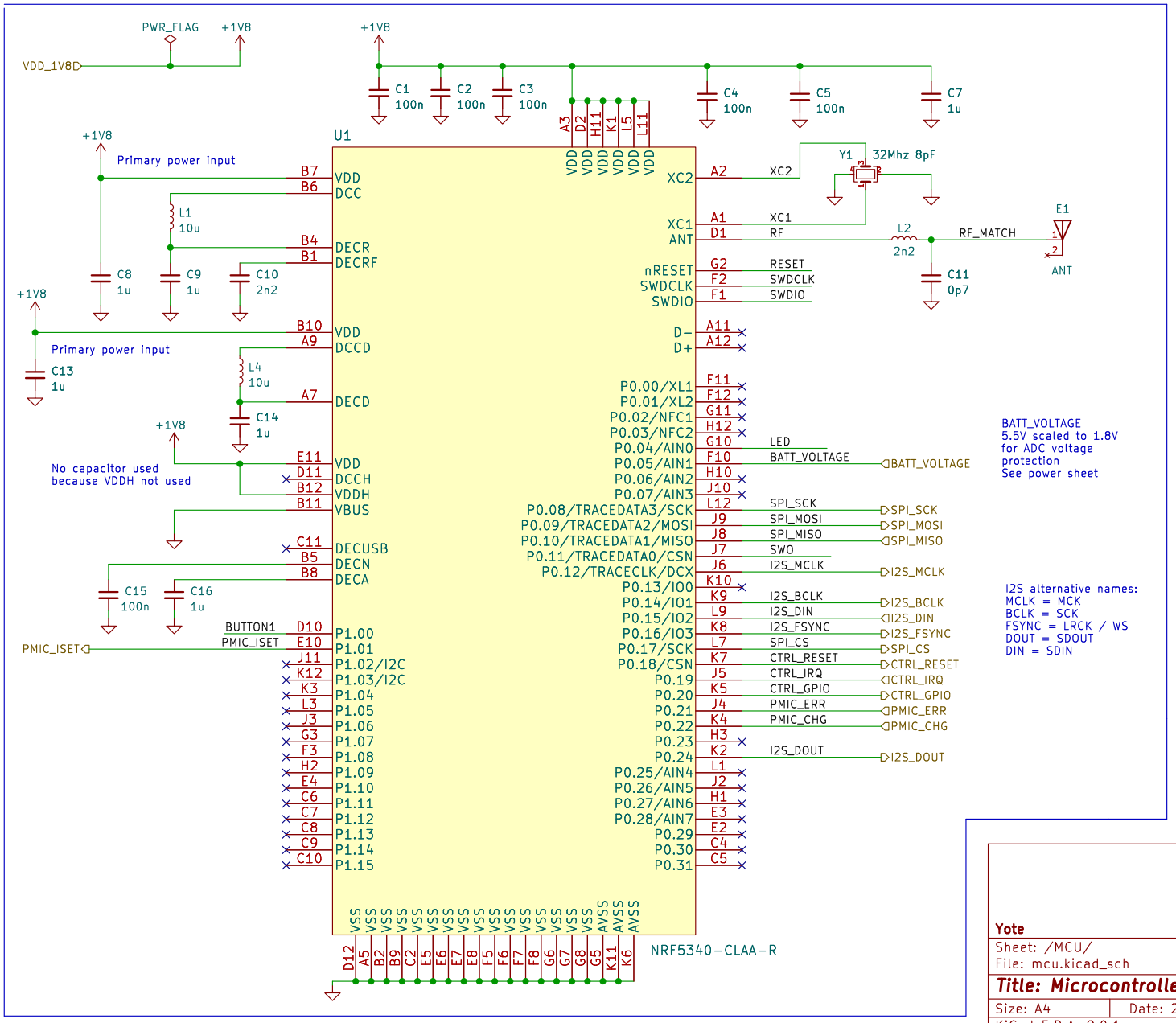


This device is intended to capture audio from two microphones, clean up the signal using a dedicated DSP chip and an MCU, apply compression and send the amplfied mono audio directly into a hearing aid compatible RIC (receiver in canal / earpiece). The device runs off a Li-ion battery and can be charged at 5V. Other features include Bluetooth control and Bluetooth LE Audio.

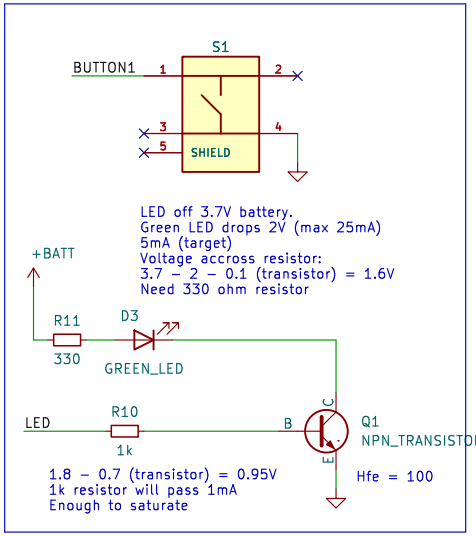
Yote		
Sheet: /		
File: yote.kicad_sch		
Title: Hearing Aid		
Size: A4	Date: 2023-04-01	**Rev: 0.1**
KiCad E.D.A. 8.0.1		Id: 1/4

MCU

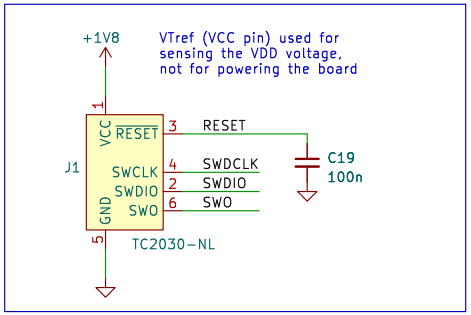
nRF5340 Microcontroller



User Interface



Debug Interface



Yote

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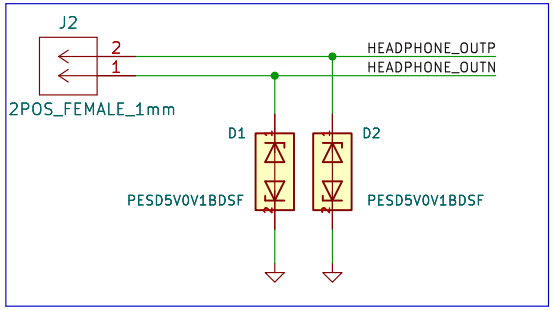
Title: Microcontroller

Size: A4	Date: 2023-04-03	**Rev: 0.1**
KiCad E.D.A. 8.0.1		Id: 2/4

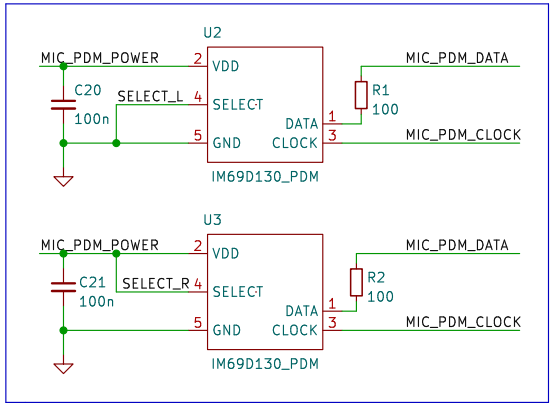
Audio

Headphone Out



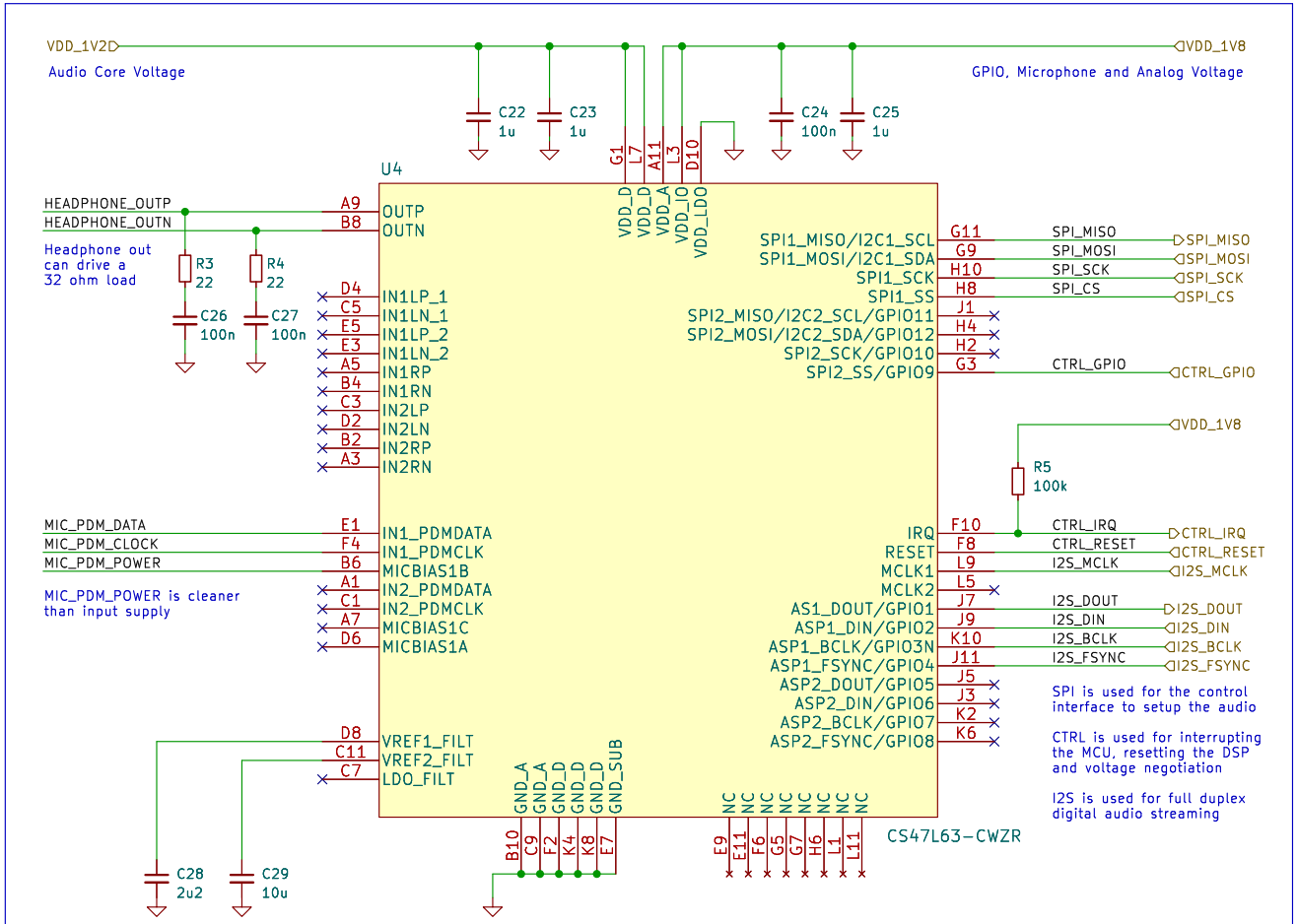
ESD protection diodes

PDM Digital Microphones



One mic is configured to output on left channel
and other on right via SELECT pin config.
This way they can share the same stereo stream

Digital Signal Processor (DSP)



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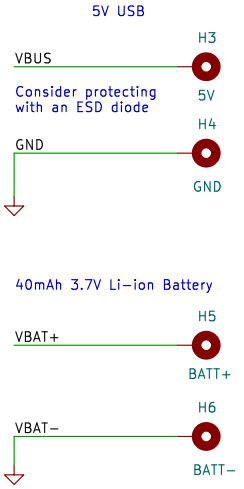
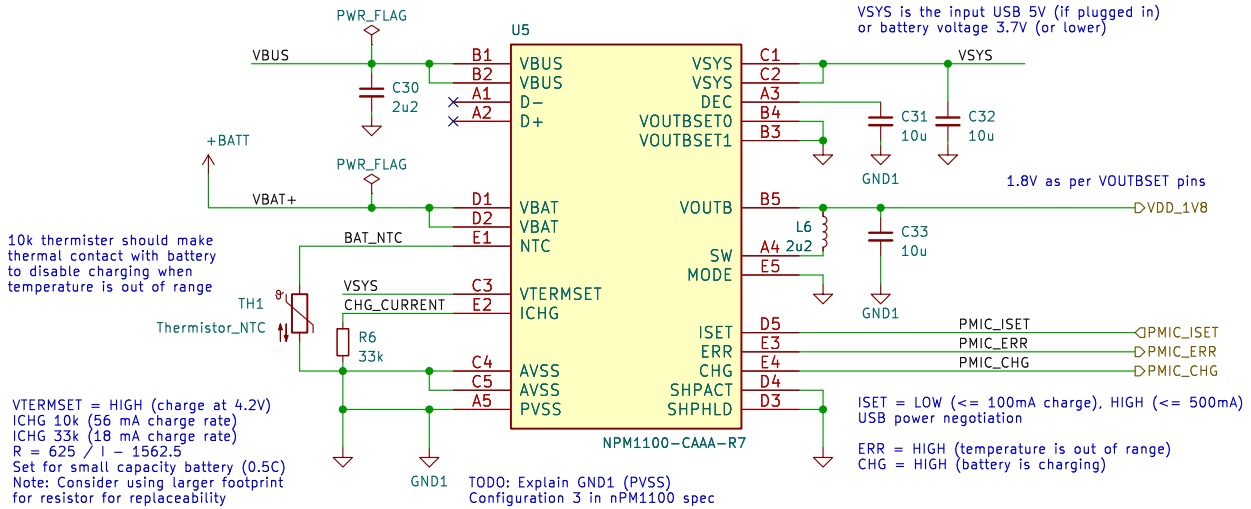
KiCad E.D.A. 8.0.1		Id: 3/4

Power Supply

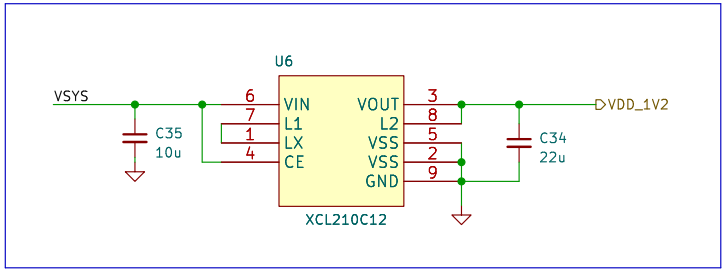
Power Connectors



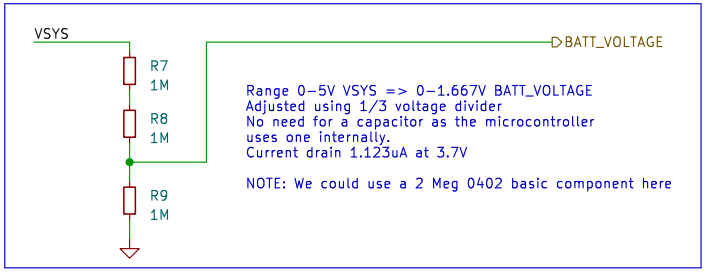
Battery Charger and 1.8V Converter



1.2V DC/DC Converter



Battery Voltage Measurement



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KiCad E.D.A. 8.0.1		Id: 4/4