**Audio Amp Possibilities**

SSM4567 – Analog Devices

<https://www.analog.com/en/products/ssm4567.html>

* I2S

MAX98357A – MAXIM Integrated

<https://www.maximintegrated.com/en/products/analog/audio/MAX98357A.html>

* I2S
* Mono

SSM2315 – Analog Devices

<https://www.analog.com/en/products/ssm2315.html#product-overview>

* Differential
* 3W
* Mono

MAX9778 – MAXIM Integrated

<https://datasheets.maximintegrated.com/en/ds/MAX9777-MAX9778.pdf>

* Differential In
* I2C configurable
* Headphone/ Speaker automatic detection and switching
* 3W speaker out
* Can switch between 2 inputs
* Don’t need I2C for Max9778

LM49450 - Texas Instruments

<https://www.ti.com/product/LM49450>

* Headphone detection
* Class D
* Stereo 2.5W per channel
* I2C configurable
* 32 step volume control

**TPA2017D2 – TI**

* Class D
* 2.8W per channel w/ 4 Ohm Load @ 5V
* WFN Package
* Smart Gain (automatically determined to avoid clipping and for max amplification)
* 2 pins for setting smart gain configuration
* 1 for shutdown

**MCU -** ATSAMD21G18

* Program as Feather M0

**Rotary Encoder**

<https://www.digikey.com/en/products/detail/bourns-inc/PEC11R-4220K-S0024/6164059>

* 3 GPIOS for each rotary encoder (2 for left/right and 1 for push switch)

**Potentiometer -** PTV09A-4020U-B103

<https://www.digikey.com/en/products/detail/bourns-inc/PTV09A-4020F-B203/3781126>

* Single analog read input per potentiometer
* Tie between 3.3V and Ground

**RGB LED**

<https://www.digikey.com/en/products/detail/everlight-electronics-co-ltd/EAST1616RGBB2/8510360>

* Common Anode

**LED Driver -** TLC5947

<https://www.ti.com/lit/ds/symlink/tlc5947.pdf?ts=1613292426730&ref_url=https%253A%252F%252Fwww.google.com%252F>

* Adafruit libraries
* 24-channel so 8 RGB LEDs
* Constant Current sink
* IRef to set Current (2.5k sets to 20 mA)

**LDO -** AP212K-3.3

<https://www.diodes.com/assets/Datasheets/AP2112.pdf>

* 3.3V out
* 300 mA max

**Power Options**

* Amp works off of 5V so no need (power off 5V)
* SAMD21 has to work off of 3.3V
* TLC5940 can work off of 3V to 5V (power off 5V)
* Rotary encoder should work with 3.3V
* 3.3V LDO for MCU