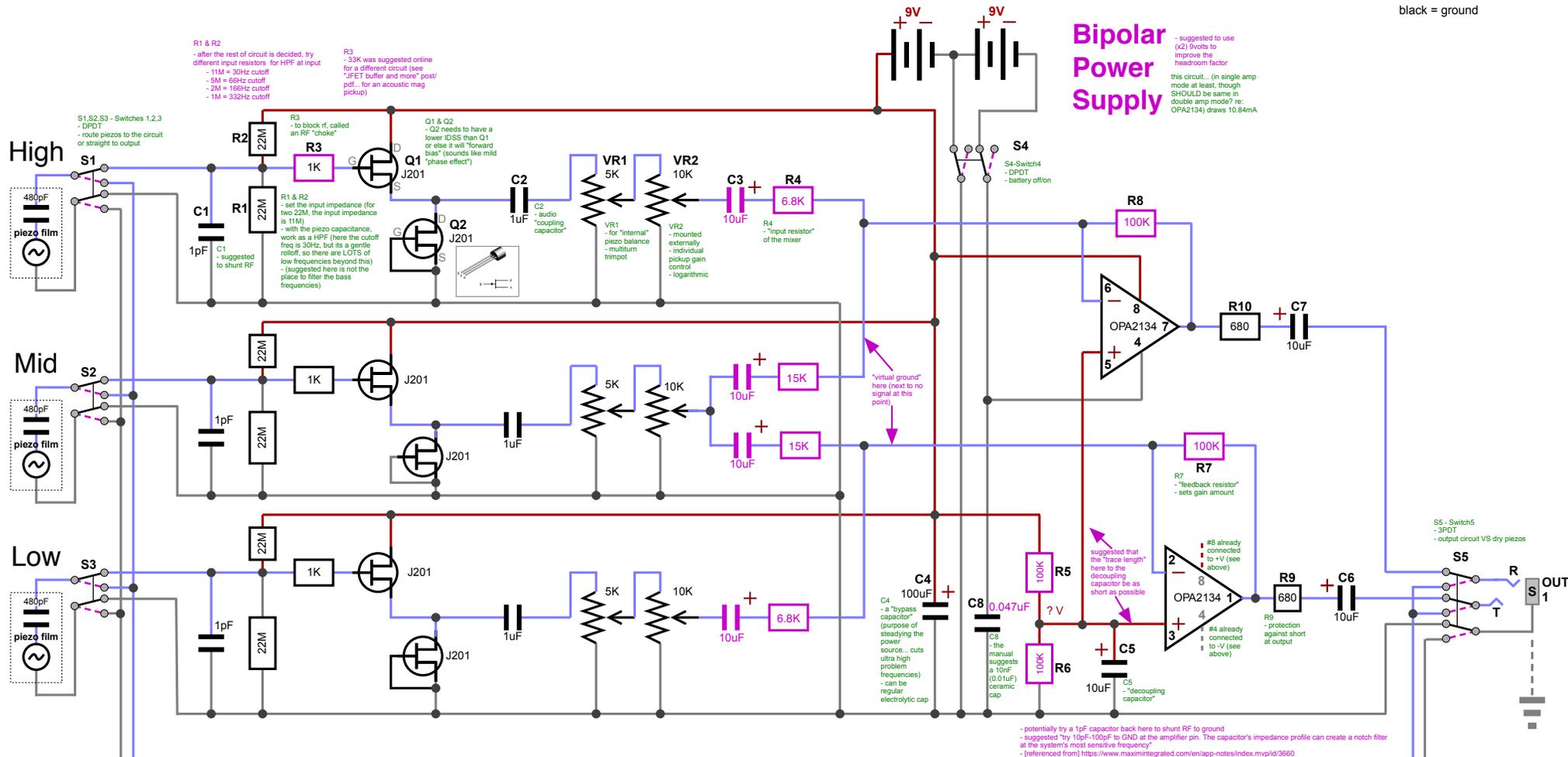


Combination Buffer, Mixer, Gain Circuit - vrsn2.4

red = power supply
blue = "audio"
black = ground



CircuitPartA - Buffer

CircuitPartB - Mixer and Gain

(in "inverting mode", acting as virtual earth mixer)

Piezo Films - LDT-0-028K

- each can act as an "input capacitor" [the following from LDT datasheet]
- 480pF source capacitance [the following from DTseries datasheet]
- Min. impedance- 1MΩ - recommended 10MΩ
- Output voltage- mV to 100% of volts
- the capacitance is proportional to the area and inversely proportional to the thickness of the element [the following from "Technical Manual" referring to DT1]
- Capacitance: 1.36 nF; Dissipation Factor of 0.018 @ 10 KHz; Impedance of 12 KΩ @ 10 KHz

"Dry" Piezos

(used for testing purposes)

UA22 soundcard

- [from spec sheet]
- Input Impedance
- INPUT 1, 2 (XLR type): 4KΩ (balanced)
- INPUT 1, 2 (1/4-inch TRS phone type): 34KΩ (balanced)
- INPUT 1 jack supports high impedance

Firewire1814 soundcard

- [from spec sheet]
- Line Inputs
- nominal input level -10dBV
- max input level +2.1dBV, typical
- input impedance 10KΩ, typical
- Mic/Inst. Inputs 1-2 (Balanced, at Minimum Gain)
- max input level -3.8dBu, typical
- input impedance

Bipolar Power Supply

- suggested to use (x2) volts to improve the "headroom" factor
this circuit... (in single amp mode at least, though SHOULD be same in double amp mode? re: OPA2134) draws 10.84mA

- potentially try a 1pF capacitor back here to shunt RF to ground
- suggested "try 10pF-100pF to GND at the amplifier pin. The capacitor's impedance profile can create a notch filter at the system's most sensitive frequency"
[referenced from] <https://www.maximintegrated.com/en/app-notes/index.mvp/id/3660>