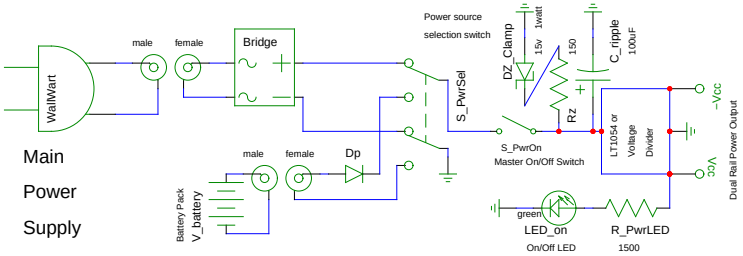
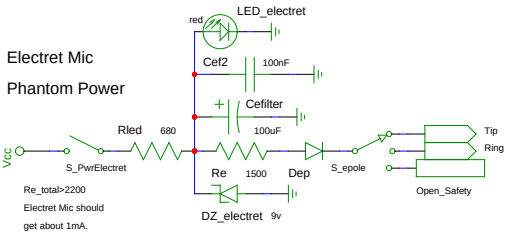
Universal Headset Amp (for computer VoIP, balanced audio, and telecom)

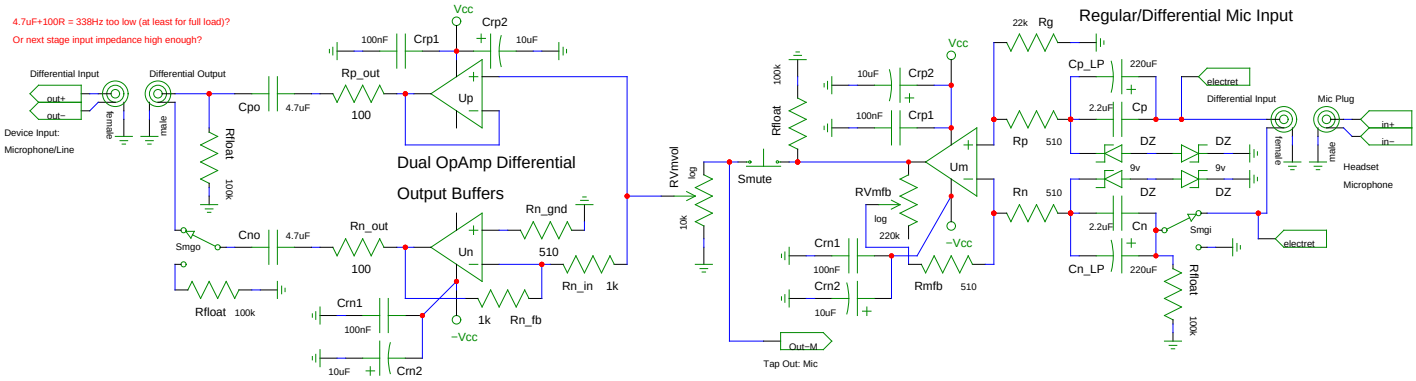
2010-07-19

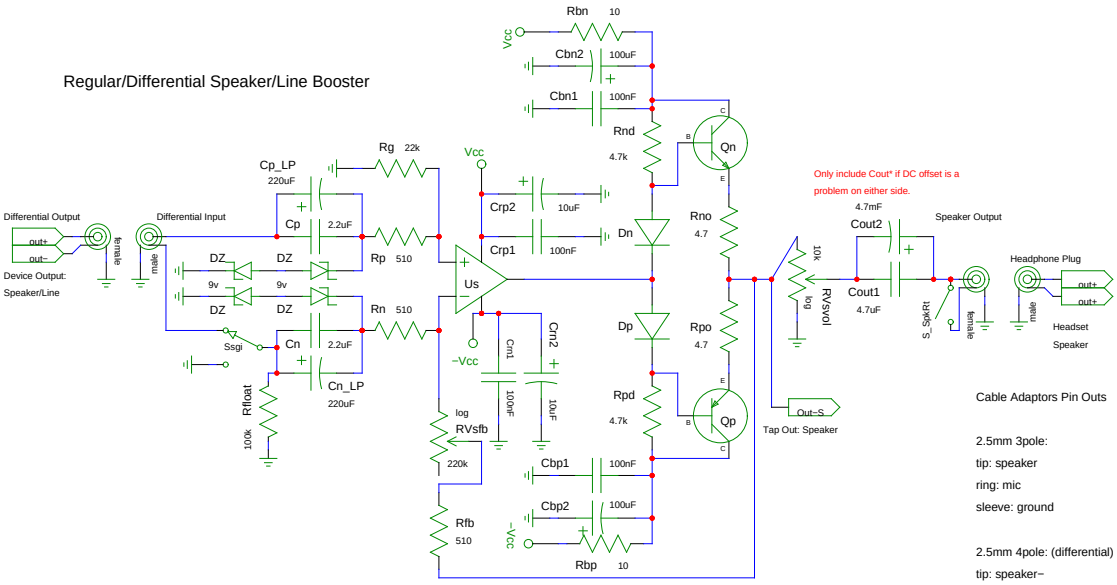
Objectives: far better than average, highly flexible, clarity, high volume, voice recording tap, battery and wall powered; relatively simple, easy, and robust.



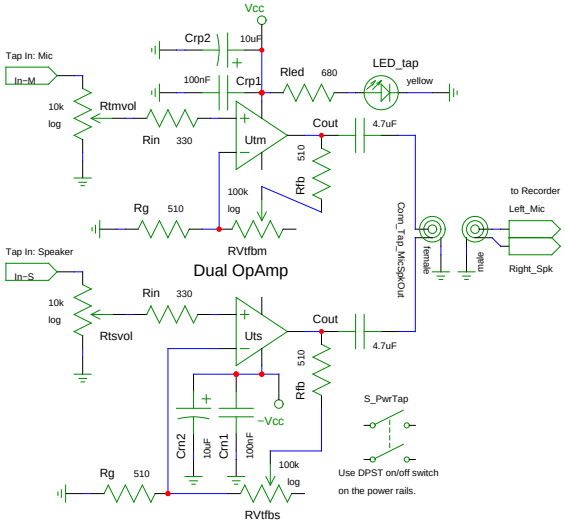
Dep protects the electret power circuit from reverse voltage of phantom power. Use "Open_Safety" as a full disconnect and to also remove electret power filtering from the audio signal.







Headset Amp Power Draw:
@ 4.5v full on: 54mA
normal headset: 34mA
electret: +2mA
tap: +18mA
@ 9v full on: 84mA
normal headset: 50mA
electret: +8mA
tap: +26mA



Someday To Do / Upgrades:

Um+Us are generally on a single dual op−amp.

Add transistor voltage pre regulator on power input.

For cell phone use, add RF shielding around the unit and the cable to the cell phone.

Auto flip from wall to battery and back as needed.

The DC block signal capacitors can be higher for better low frequency response. If PA Phantom Power is used, capacitors should be 60+v rated.

Constant current battery charger.
(paralleled battery packs get xN current)
Some way to alert between NiMH's and alkalines?
Battery charger disable switch (for alkalines).
Charge status LED's and bar graph.
Auto charge start when plugged into wall.

Some type of mic VCA signal compression?

Some type of noise cancelling mic and speaker capability?

Cable Adaptors Pin Outs

2.5mm 3pole:
tip: speaker
ring: mic
sleeve: ground

2.5mm 4pole: (differential)
tip: speaker−
ring1: mic+
ring2: speaker+
sleeve: mic−

telephone handset RJ11 mini:
(these are really messed up)
female RJ11, clip down, looking in,
left to right: black red green yellow.
speaker: yellow + black
mic: green + red
independent grounds: black + red
high voltage warning (50v measured).
mic or spk to actual ground will cause hang up/flash.
Telco's use negative power because of cables buried in the dirt and issues with electrolysis.

XLR Cannon Plug:
1: ground
2: signal
3: inverted signal

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