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Minimum Goals/"Commitments"

Items	**Description**	**Demo**
Preamplifier	Amplify the signal from pickup to audio line signal.	Produces an output of 1 Vrms
Tone Control	Capable of changing the frequency response of the bass and treble	Can change the voltage output of 10 Hz - 1 kHz (bass) and 1 kHz - 20 kHz (treble) with potentiometers.
Tube Overdrive	Lightly distorts signal at low levels and "soft clips" at higher volumes	Tube stage is capable of producing unclipped output waveform up to ~-10dB, with compression/overdrive kicking in above ~-10dB
Effects Line Level Outputs	Output stage resets processed signal to exact line levels and allows system to drive stereo line loads. Output is split using S-taper panpot circuit.	Output can drive two 10-30k ohm RCA line load at 1Vrms. Sweeping panpot results in S-taper signal output levels.
Power Output	Amplifies line level signal to levels capable of driving a small speaker.	Play music through speakers and show output on scope.

Goals:

Items	**Description**	**Demo**
Magnetic Pickup	Making a pickup that can get a signal a violin string.	Pickup produces signal (50-200 mV).
Spring Reverb	Creates a standing wave of the input frequency in a mechanical spring. Long decay of input impulse is produced	Spring tank amplifier can saturate tank with >5Vpp at full input signal (~160mW).
Mixing Stage/Preamp	Amplifies weak reverb signal and applies highpass to cut out low frequency bumps. Mixes "wet" reverb signal with "dry" original signal	Preamp cuts frequencies below 60-100Hz. Mixer allows user control over wet/dry mix.
Effects Stage Noise Level	Noise level should be	Noise level is under -30dB

	reasonable volume	(30mVpp)
Output Stage Power Output	System outputs 75W of power to two speaker channels with accurate volume adjustment and little to no distortion.	Play music through two speakers, demonstrate volume adjustment and system accuracy on an oscilloscope.

Stretch Goals

Items	**Description**	**Demo**
Low Noise Effects Stage	Noise level should be nearly inaudible	Noise level under -45dB (5.6mVpp)
Output Stage Power Supply	An off-line forward converter capable of generating 30VDC and 12VDC with minimal noise.	Show voltages on a multimeter, drive large load (e.g a motor) using the output.
Output Stage Power Output	System outputs 100W total of power to two speaker channels with accurate volume adjustment, no noise or audible hissing, no distortion, and a clean execution on a PCB with SMT parts.	Play music through two large speakers, demonstrate volume adjustment and system accuracy on an oscilloscope.