6.101 Final Project Checklist
AM Receiver and Visual Spectrum Sweep
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Local Oscillator
2x Cullpitts Oscillator
~Voltage controlled variable frequency between 900KHz- 2.1MHz
~Sinusoidal output
~ Two oscillators that roughly ‘track’ each other.

Sweep Generator
~Generates a linear ramp spanning at least 1v to 5.1v
~able to be visualized on an oscilloscope in XY

Tuning Line Generator
~Generates a pulse at when swept
~Pulse controllable with tuning voltage
~able to be visualized on an oscilloscope in XY

Audio Amplifier
~Gain of at least 10
~Volume control
~Able to drive 8ohm load without distortion

RF LNA Amplifier
x1 functional three-stage BJT amplifier
~gain of at least 100
~expected input voltages of 20-500 microvolts
~expected output of millivolt range

RF Filter
x1 anti-imaging filter
~expected second order roll off
~expected cut off frequency of about 1.5MHz

Mixer
x2 integrated bjt filters, for the two IF chains
~expected multiplication of LO and RF with minimal attenuation

IF Filter
x4 pairs of cascode amplifier and tuned LC
~cascode amplifiers should each have greater than unity gain
~cascode amplifiers with bandwidth greater than 455kHz, the IF frequency

~tuned transforms to form filters of each stage, tuned to 455kHz
~x2 cascaded filter pairs, one for each stage.
    unsaturated output with millivolt level input voltages
    output voltages of ~500mV or greater

Detector Diode
x2 demodulating diode, one for each IF chian
~adequately demodulates AM signal of input voltages of at least 500mV
~output filter with cutoff frequency above audio frequency range (~30kHz)

Integration of System Blocks
w/signal generator LO and RF input
~view filtered and amplified signal output of RF stages
~view filtered and amplified signal output across all IF stages, with audio output from detector
~view and hear filtered, amplified signal from RF input to detector output

w/integrated constructed LO and w/signal generator RF input
~view filtered,mixed,amplified signal output across all IF stages, with audio output from detector
~view and hear filtered, amplified signal from RF input to detector output
signal off the air, w/constructed LO
~view and hear filtered, amplified signal from RF input to detector output