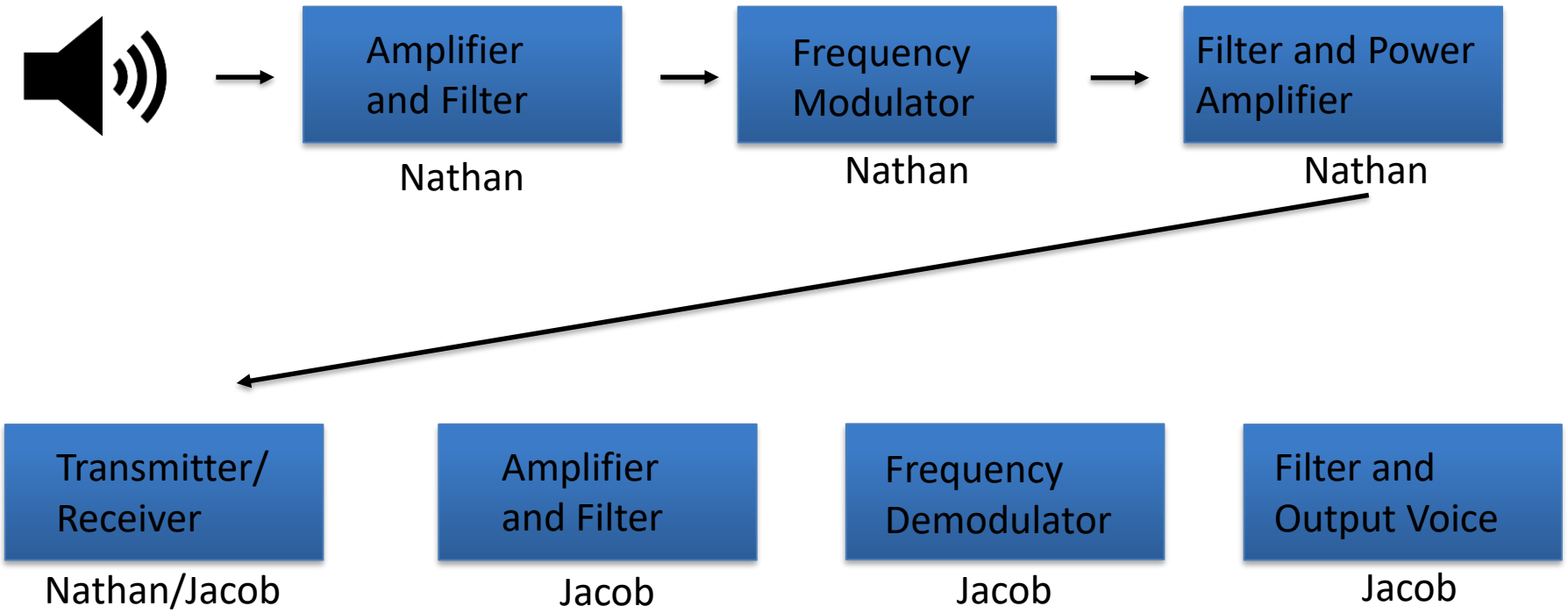
Team: #84 Ultrasonic Radio



The ultrasonic radio's input microphone covers human voice frequencies (100 Hz to 3 kHz), translating voice into an electrical signal. This signal is amplified and filtered to enhance its quality and eliminate unwanted noise. Next, it's modulated to ultrasonic frequencies for transmission, with optional additional filtering. The modulated signal goes through a power amplifier to achieve the required gain, then travels to the receiving microphone, where it's filtered and amplified for demodulation. After demodulation, it's filtered and output through a speaker within the human hearing range.

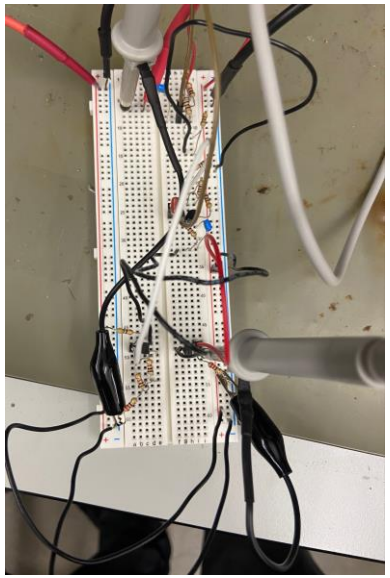
Team: #84 Ultrasonic Radio

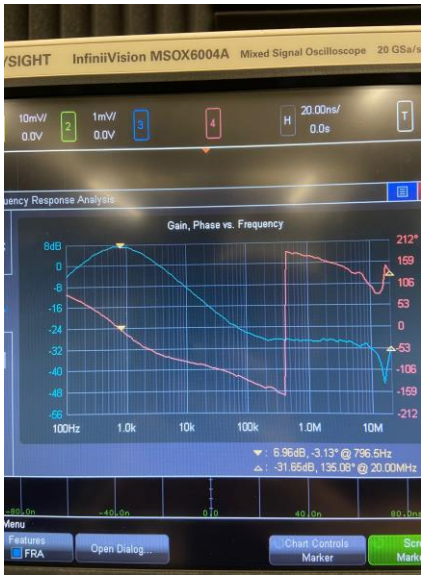
	October 2nd	October 9th	October 16th	October 23th	October 30th	November 6th	November 13th	November 20th
Design and simulate signal amplifier								
Power Amplifier Research								
Modulation/demodulation Research								
Order Parts								
Filter Design								
Signal Amplifier Test								
Design and simulate modulation/demodulation								
Power Amplifier Design								
Filter Test (For Modulation)								
Filter Test (For Demodulation)								
Test modulation/demodulation								
Power Amplifier simulation and test								
Completed Altium PCB								
Final Testing								

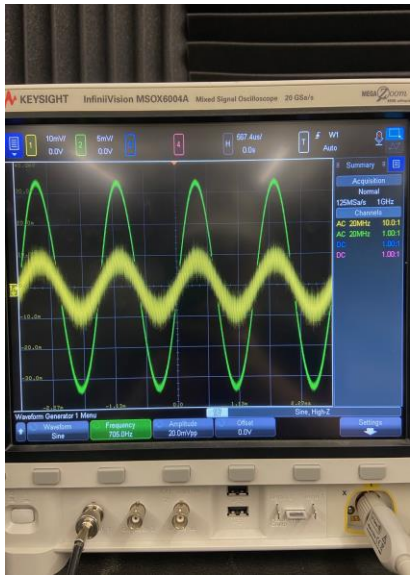
Completed Pending Not Started Behind Schedule

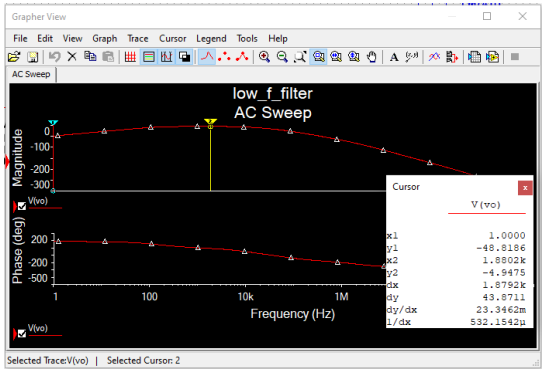
Signal Amplifier/Low Frequency Filter/Frequency Modulator Nathan Cinocca

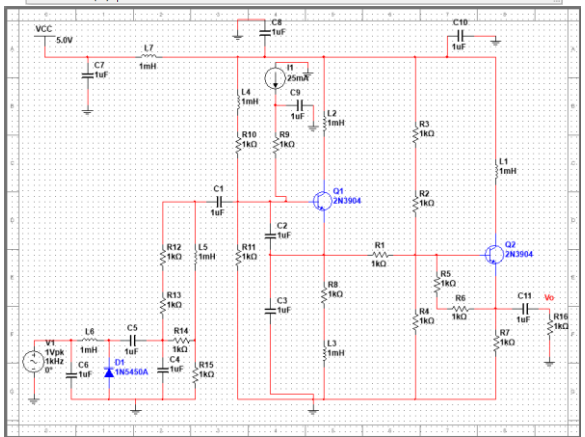
Accomplishments since the last presentation 40 hrs	Ongoing progress/problems and plans until the next presentation
• Designed, Simulated, and Tested Signal Amplifier • Design and Simulated Low Frequency Filter • Created Design for Frequency Modulator	• Signal Amplifier gain is low • Planning to do more work on Modulator and Power Amplifier • Practice with Altium for PCB











Signal Amplifier, High Frequency Filter, Demodulator

Jacob Ralls

Accomplishments since the last presentation 40 hrs	Ongoing progress/problems and plans until the next presentation
• Designed, Simulated, and Tested 4th Order Chebyshev Bandpass Filter • FM Demodulation Design using PPL Created	• Issue with noisy lower frequencies for the bandpass filter • Simulations and Testing for the Demodulator • Designing of Altium board with progress