## Breadboard Wiring Schematics

**Figure xx** is a layout of our intended breadboard wiring schematic. As shown, it features our chosen STM32F446RE, and a simple PNP based amplifying circuit. A GPIO of the STM board will be used to drive the gate of the transistor; this will be used to generate the active-low, push-to-talk signal for the radio. There is a 100nF decoupling capacitor across the push-to-talk line, this is to help reduce RF noise that may affect the circuit performance. A PWM ready GPIO is used to output an analog waveform. This output is passed through a simple voltage divider to lower the peak voltage from 3.3V to 500mV; 500mV is the expected input of most radios. After the analog waveform voltage level has been reduced, it is passed through a 100nF coupling capacitor to remove DC from the audio tone.

Note: Testing can be done on a breadboard with neglect of the imperfections associated with this circuit construction method. This is due to the low frequencies involved with the intended signals.