ADDENDUM:

Depending on which output RF amplifier you choose, you may need to attenuate the output of the buffer amplifier so as not to overdrive the final amplifier. Some of the advertised amplifiers are specified as requiring 1 mw drive for maximum output, however, most seem to require as much as 6 dB or more lower drive. Three resistor positions are available on the circuit board so you can add a ‘T’ attenuator at AT1A, AT1B and AT2. The attenuator is placed before the buffer amplifier and the buffer amplifier input is connected to the pad marked ATTN\_TOBUF instead of TOBUF.

The Arduino microprocessor has been programmed to supply a sub-audible tone for repeater access or squelch control. The microprocessor outputs a 50% duty cycle square wave on pin D3. This is not suitable for direct use as a tone but the square wave is run through a low pass filter consisting of R7, R8, R9 and C16, C17 and C18. This filter changes the initial square wave into a sine wave. The output of this tone level is set by R10 and applied to the microphone input on the board through R11. Set the level to produce about .2 kHz deviation as viewed on the receiver software. The tone will be on any time the microprocessor is active. If you do not want the tone, comment out the command on the line noted in the software and it will not be generated. The note frequency is also set in the software and may be changed as necessary for your application. The default frequency is 72 Hertz. It cannot be set exactly to some frequencies, but will be within a half hertz, which is close enough for its use. The minimum frequency that can be set is 30 Hz. You can change the tone frequency in the software as well.

The Microphone gain (R4) should be set just below the point where distortion is generated in the voice. This is not a deviation setting but only sets the audio level so as not to exceed the A to D converter range in the microprocessor. Deviation is controlled by the software.