Speaker Driver Hack

These optional assembly instructions explain how to use Motor Port #5 (on the Expansion Board) for the purpose of driving a small 8 Ω speaker. After performing the modification, the motor port will no longer be able to drive a motor.

The hack involves cutting a trace (that leads from the 'HC374 latch to a motor driver input) and jumpering in the control signal from the piezo beeper. A hole has been provided to inject the signal.

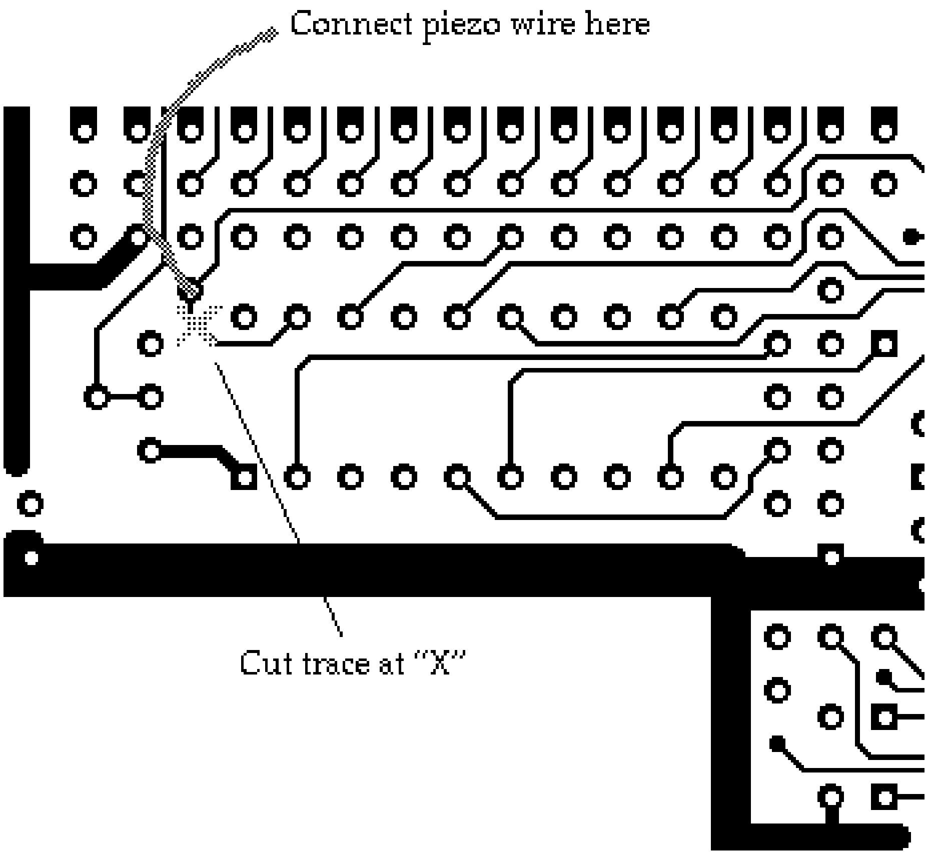

Figure 1: Component Side of Expansion Board

Figure 1 illustrates the hack. The piezo wire should be tapped from the positive (+) terminal of the piezo. There are several extra holes accessible on the solder side of the Microprocessor Board to make this connection.

Figure 2 illustrates the wiring of the speaker to a standard motor connector plug. *The 100 to 200 ohm potentiometer, used as a volume control, is required.* Without the

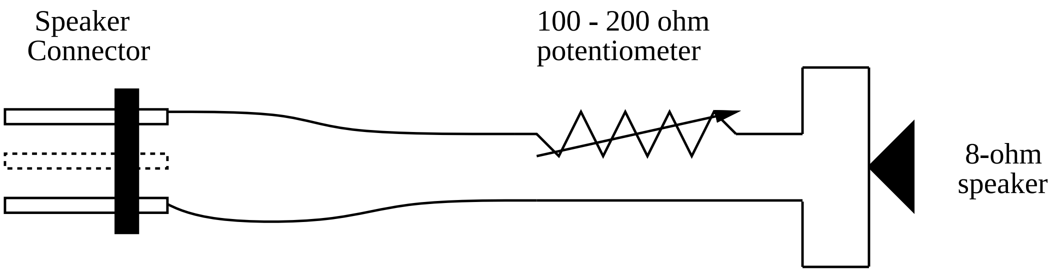

Figure 2: Speaker Plug and Wiring

variable resistance, the speaker will be extremely loud. Note that the potentiometers included in the kit—a 10 KΩ slide pot and a 125 KΩ rotary pot—are much to large in value to work effectively as a volume limiter.

After wiring the speaker, plug it into the Motor 5 port (the two connector pins closer to the motor chip).

From IC, execute the command `fd(5);`. This will turn on Motor Port 5, enabling the piezo signal to control the speaker. Execute any command that creates a tone (e.g., `beep();`), and the tone should be played through the speaker as well.

Note: The speaker circuit actually does not require the use of the right side of Motor Port 5. The speaker could be wired from the left side of Motor 5 to ground. However, the additional pin of each uni-directional driver provides a +6 volt signal, not ground. In configuration presented here, when the `fd(5)` command is issued, the right side of the motor 5 driver acts as speaker ground.