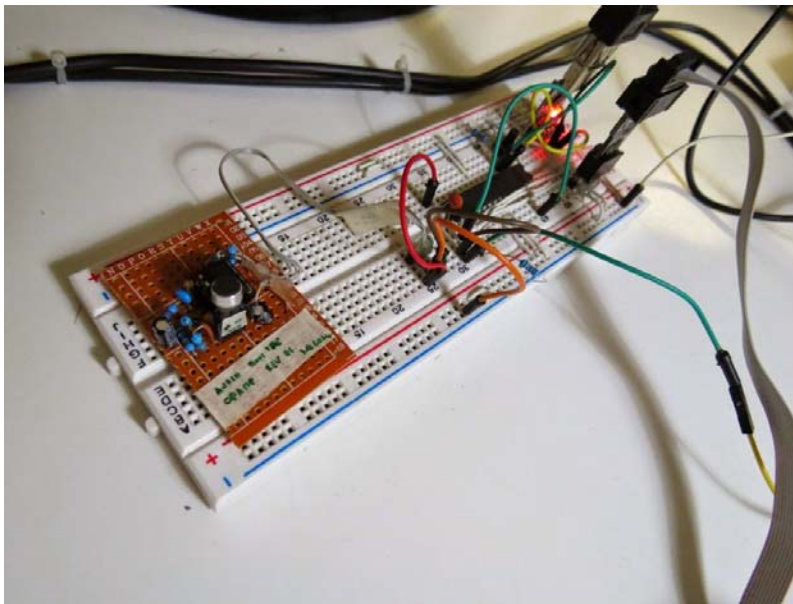


For the NPN version of this board, and for more information about microcontroller ADC and microphone input, please refer to this page:
<http://davigeroni.blogspot.it/2014/11/a-npn-transistor-electret-condenser.html>

[illegible]

C3 is a power supply stabilization condenser.

R4 helps remove noise from the power line, but it can also be omitted.

R5 is used to polarize the microphone.

C5 is a low pass filter, it helps to remove board noise.

C4 is the input DC blocking capacitor.

R3 and R9 sets the circuit gain.

R9 loads the NPN collector.

R3 bias the signal using the collector feedback bias design, it prevents thermal runaway and stabilize the operating point, in conjunction with R9 resistor, this sets the gain of the board.

C2 is a low pass filter.

C1 reduce dc "noise gain" by capacitively coupling the feedback, it also act as an high pass filter

R6 and R7 does a voltage divider to perform the bias on the signal.

C6, R1 and R2 also is an input voltage divider, and the cap here is the output DC blocking capacitor, this design has input and output voltage divider cause one can supply the opamp with a voltage, and the R6/R7 divider with the ADC reference voltage, with a single supply voltage, one can remove those last components.

Tested on ATmega8 and STM32F103 ADC, loaded with 5v or 3.3v (i'm using the C suffix TLC272 that has 3v as minimum recommended), it has a little noise and it a good response even on low sound, slightly better than the NPN version.