

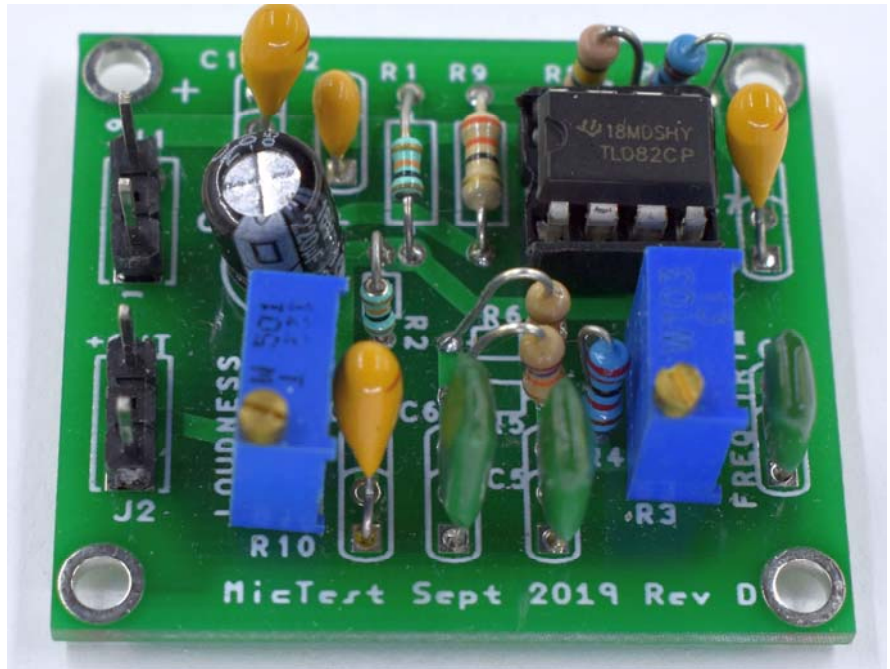
Additional notes on building the “MicTest” phase-shift Oscillator

The March/April 2020 issue of TCA magazine included my article named “A Microphone Audio Test Source for Your Ham Shack”.

I have shown here some additional information which was not included in the published article, but which may still be useful for those who build the circuit.

PC Board Version

The oscillator is simple enough to build on a piece of stripboard. However, I had previously made a PC board layout that was shown in the article. Recently I “cleaned” it up a little in the version shown above. Electrically the same as shown in the article. (The Rev D layout is included on the last page here)



Components

No special components are required. You will see in the photo above that I used tantalum capacitors for C1, C3, and C7, but mainly because my junk box had a lot of them! Electrolytic caps are fine too.

J1 and J2 are shown with 0.1” spacing single-in-line headers, but small terminal blocks will also fit, or you can just solder wires directly to the pcb.

Most of the resistors are mounted vertically as you can see, in order to conserve space. There are 4 mounting holes provided for convenience, although only 2 are really needed to mount it firmly.

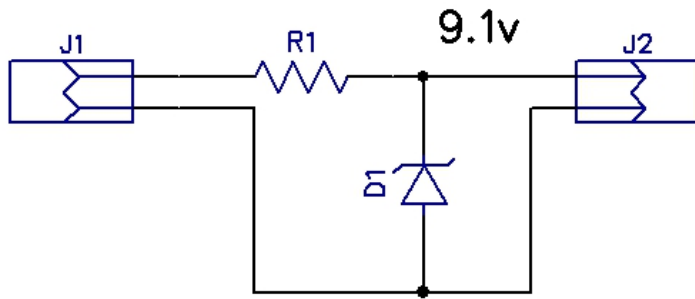
Capacitors C4, C5 and C6 need to be film types or better and 5% tolerance is recommended. (I have not seen any advantage gained by matching more closely the values of C4,C5,C6, and R5 and R6.)

It's not necessary to be able to adjust loudness on both the oscillator pcb and the LM386 audio amplifier. R10 may be replaced with a fixed value of 100 ohms in this case.

Power Source

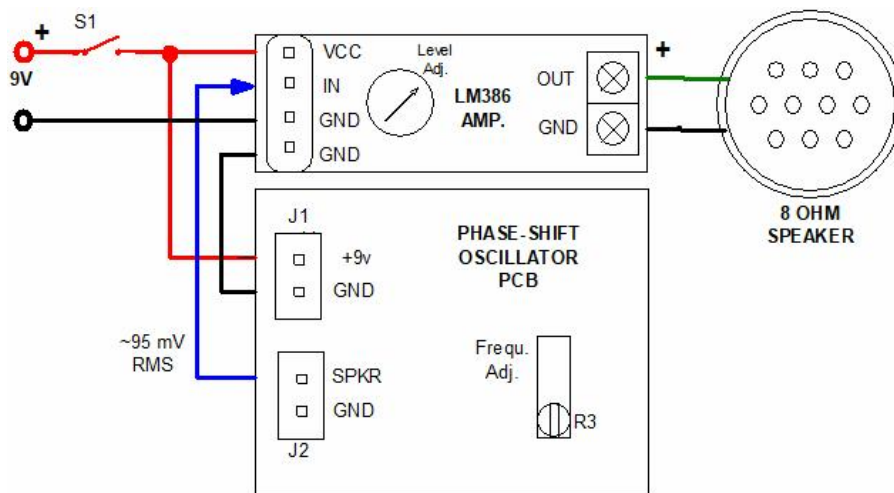
The circuit was intended to be run from a 9 volt battery. (It will also run at 5v, but the sine wave distortion will be higher so is not recommended.) My testing showed that the variation in signal output from 9.5 to 9.0v to be about 5%. If you are not happy with that then go with a regulated 9v wall type adapter. Alternatively, if you have a regulated 12v source that will work fine. Yet another option is a simple Zener diode regulator running from an unregulated 12v dc source, example shown below.

12-15 v to 9.1v adapter

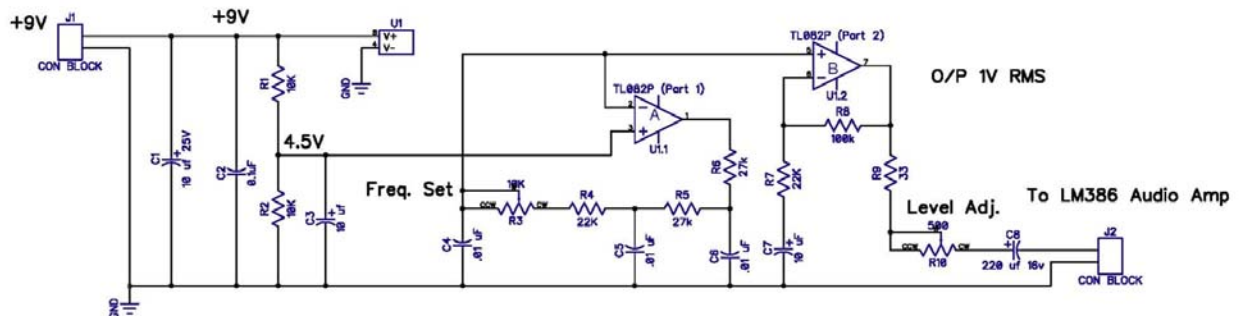


D1=1N4739A or equiv
R1=150 ohm 1/2w CF

Connections, oscillator to LM386 amplifier pcb.



1000 Hz Phase Shift Oscillator



PC Board Layout

Red is top copper, green is bottom copper and yellow is the top silkscreen with component references.

