

A PCB Layout for Dr. Quack

Lots of people have wanted to build a quick and easy Auto-filter. The old Electro-Harmonix Dr. Q seemed to fit the bill, being a very simple circuit. However, the original design was very sensitive to the input characteristics of the opamp in the circuit. Jack Orman was able to get around that problem with a couple of circuit tricks. First, he added a JFET buffer to eliminate any loading problems that the circuit might present to the input signal, then he added two LED's, one at the input reference of the opamp, and one at the output. The input LED biases the opamp input up by about 2V, instead of the 0V that the original Dr Q had. The second LED subtracts an almost-equal voltage from the output of the opamp to restore things back to 0-volts based, like the original. This keeps most opamps happy, and allows a wider range of opamps to be used. The modified schematics are on Jack's web page.

Like all GEO layouts, this one is designed to be used - that is, it's laid out to fit nicely into a specific box - my favorite, the Hammond 1590BB - and to allow easy, straightforward wiring to all the controls and jacks.

The full-size toner transfer pattern is on the next page of this document. Just follow the instructions from GEO's page on "how to build effects" for working the toner transfer.

Happy Quacking!

