

Gerhard's Method of Making Printed Circuit Boards

Recently, Gerhard (VE6AQO) told me about his method for etching printed circuit boards.

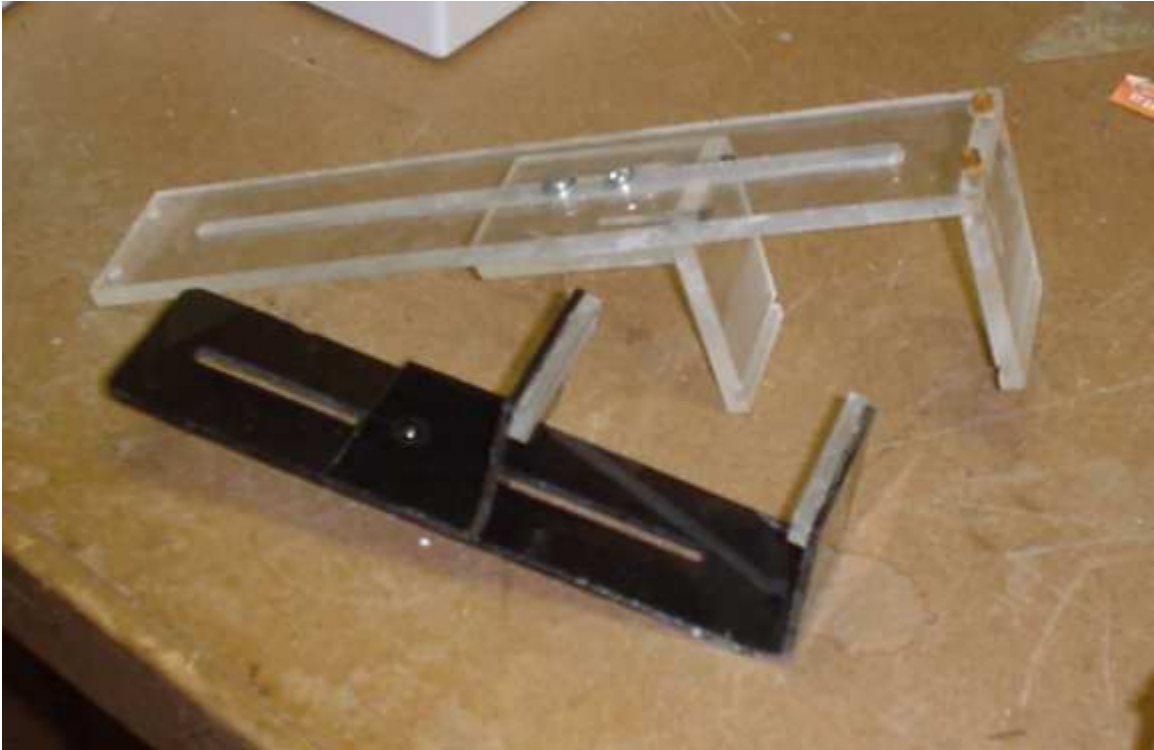
"I etch my own PCBs using a small rectangular Polyethylene freezer container that is mounted over a small loudspeaker, which is driven with 60HZ from a VARIAC transformer. I adjust the voltage until the etchant (Ferric Chloride) starts to show interference patterns on the surface. To hold the board above the bottom of the dish, I use a home made Acrylic PCB holder that has slots sawn into it. This way you don't get the messy etchant on your fingers. To heat the etchant to +40DEG C I use a 75W reflector lamp 4-5 inches away. Because the etchant is dark it absorbs the heat well. Anyways, this process works well for me when I don't want to CNC mill my boards. To make the layout, I layout the board on the PC, and then print it 1:1 on clear ink presentation film (the brand ALVIN AR23470 works very well with my laser printer, and has practically no pin-holes, and provides dense enough images for the photo process to work). This way I am able to produce small single sided circuit boards in less the 30-45 minutes."



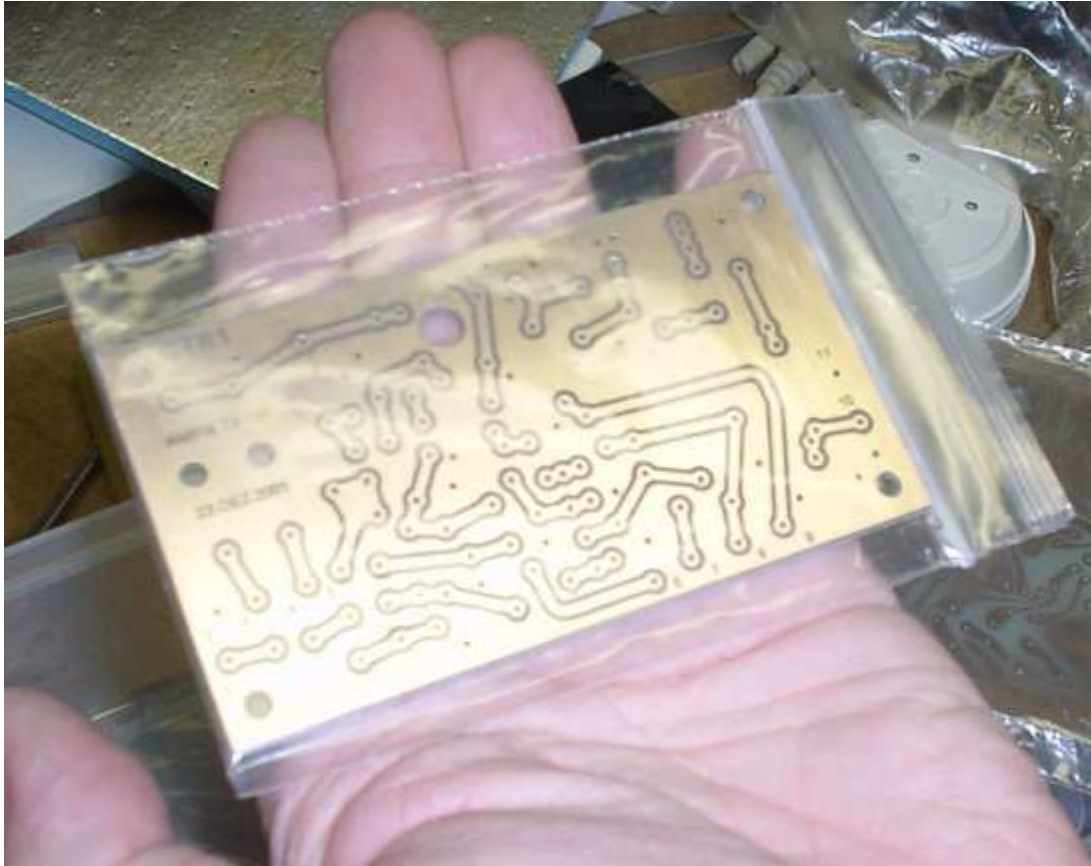
This is Gerhards etching stand.



He puts the stand in a plastic bag when etching, so that spills are less likely to damage the speaker. The heat lamp he uses to heat the etchant is not shown.



These are the tongs that grip the boards while they are being etched.



This is one of the boards Gerhard has made in his shop.