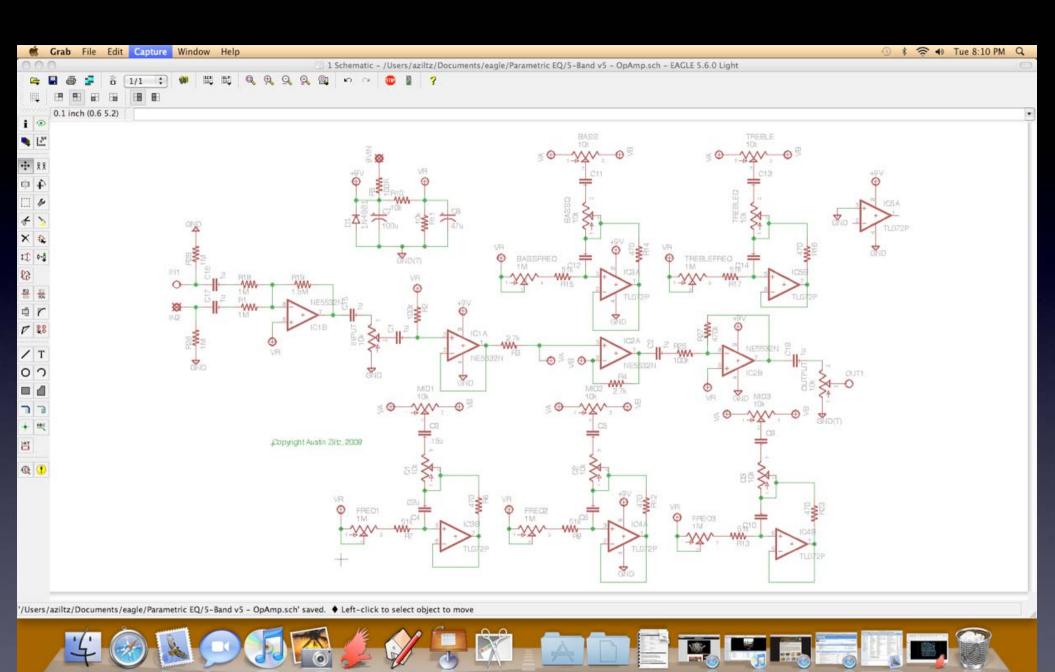
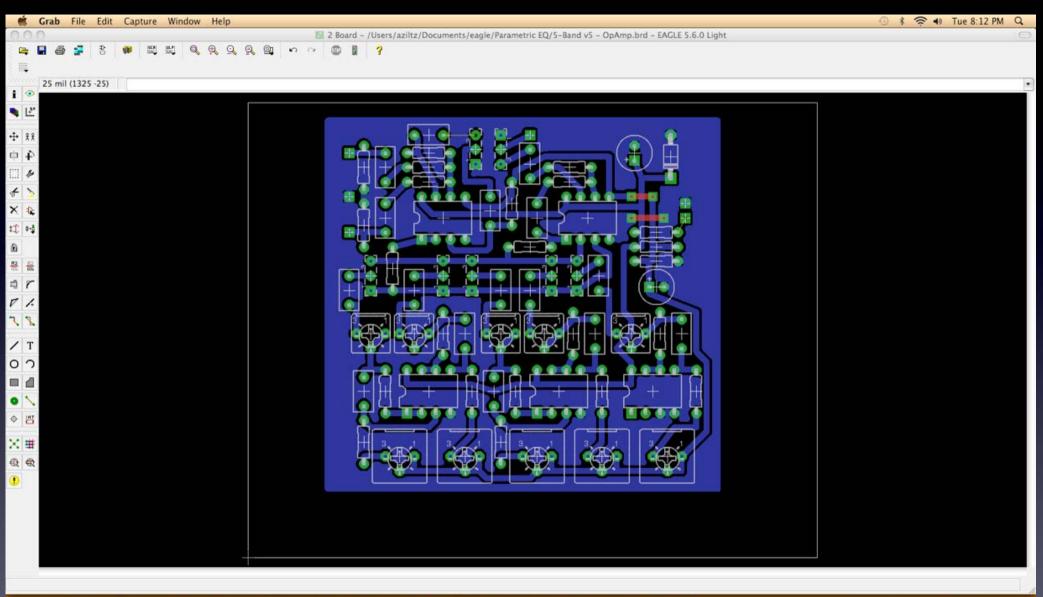
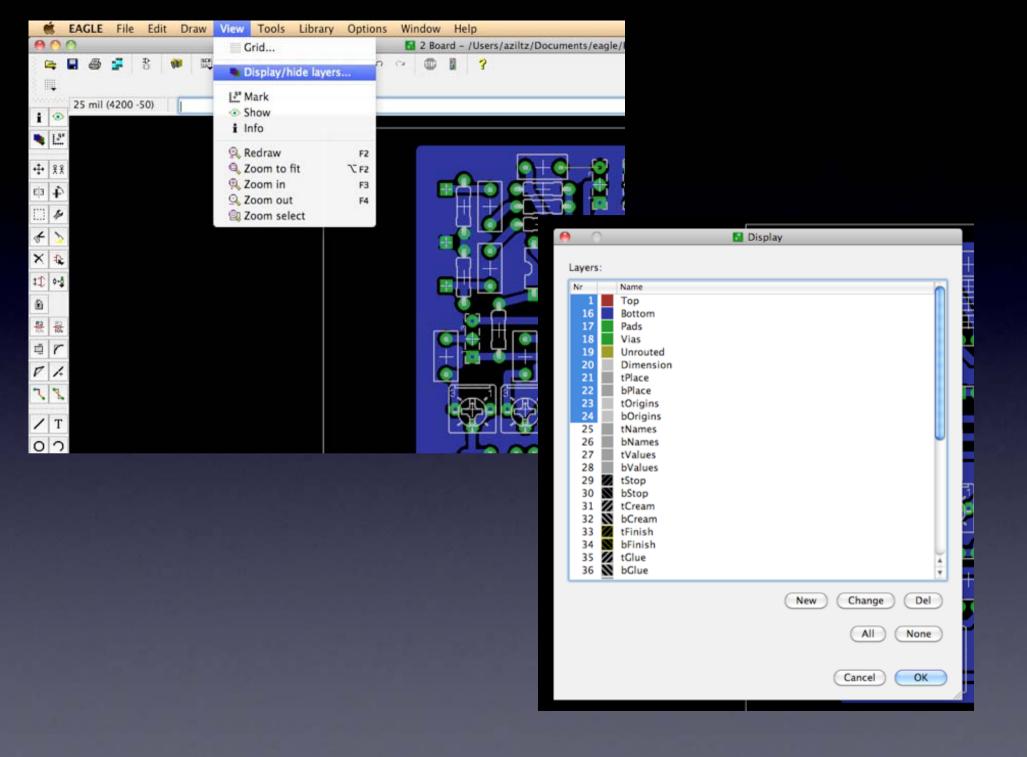
# Printed Circuit Boards

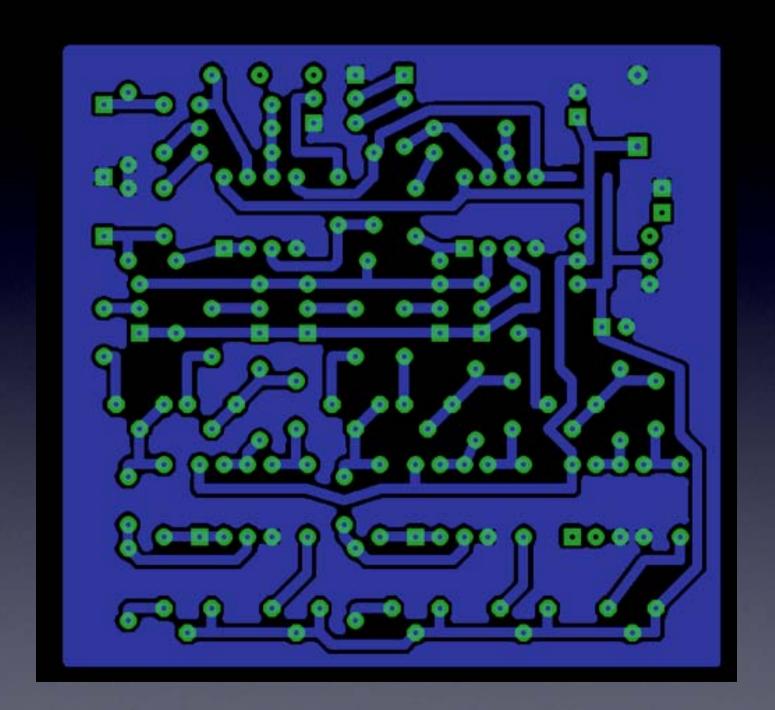
A Tutorial

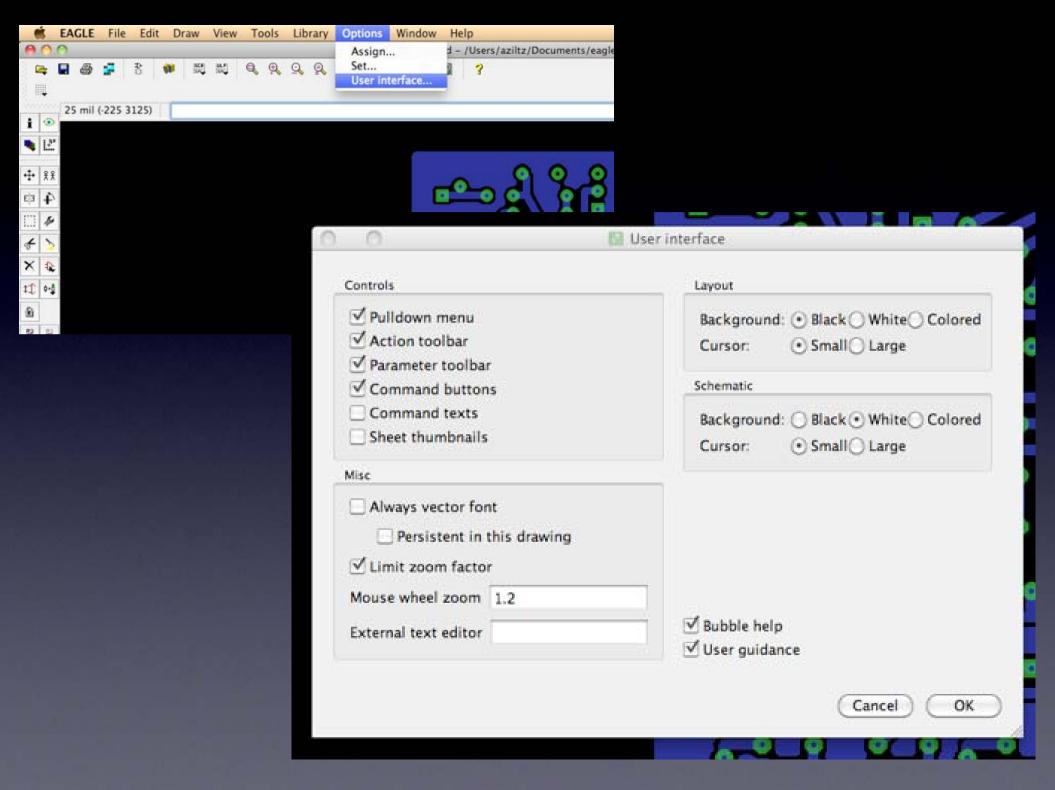


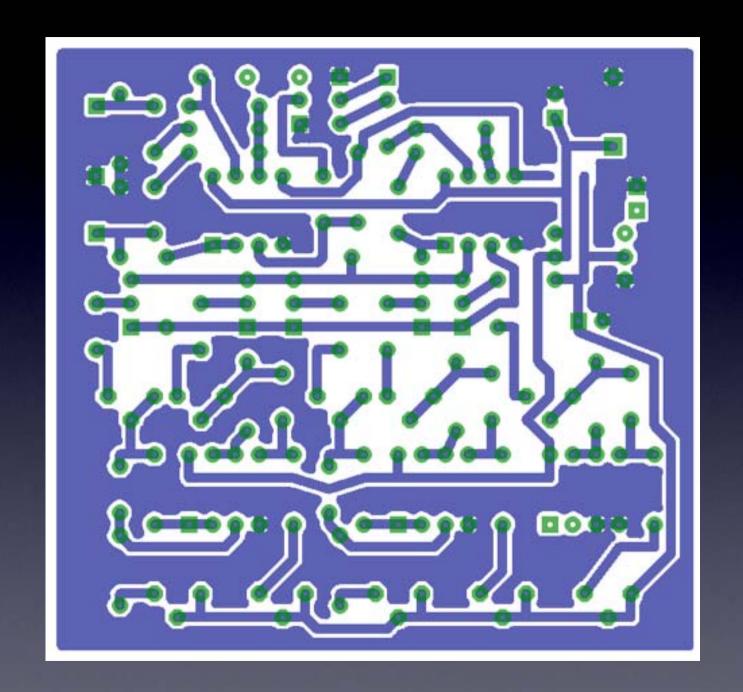


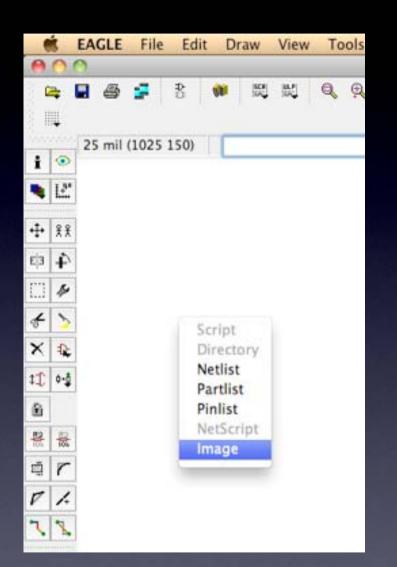


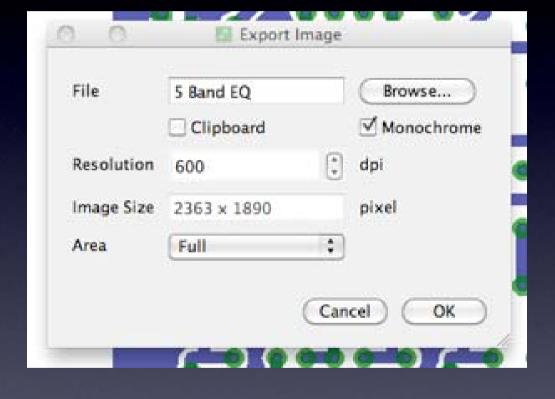


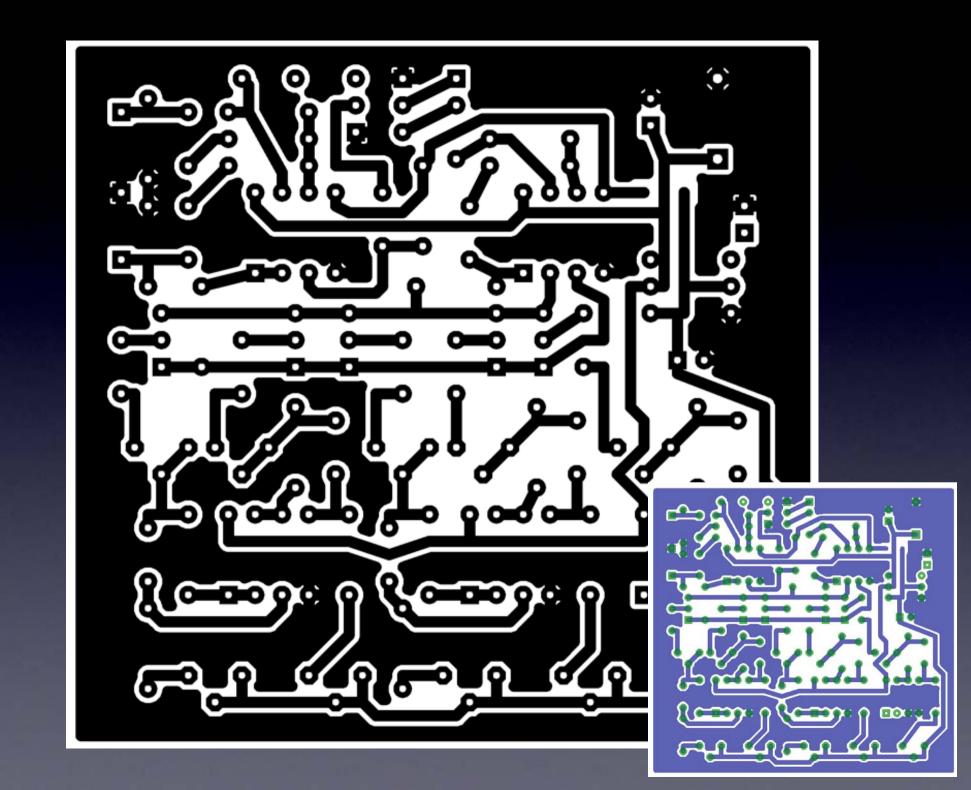


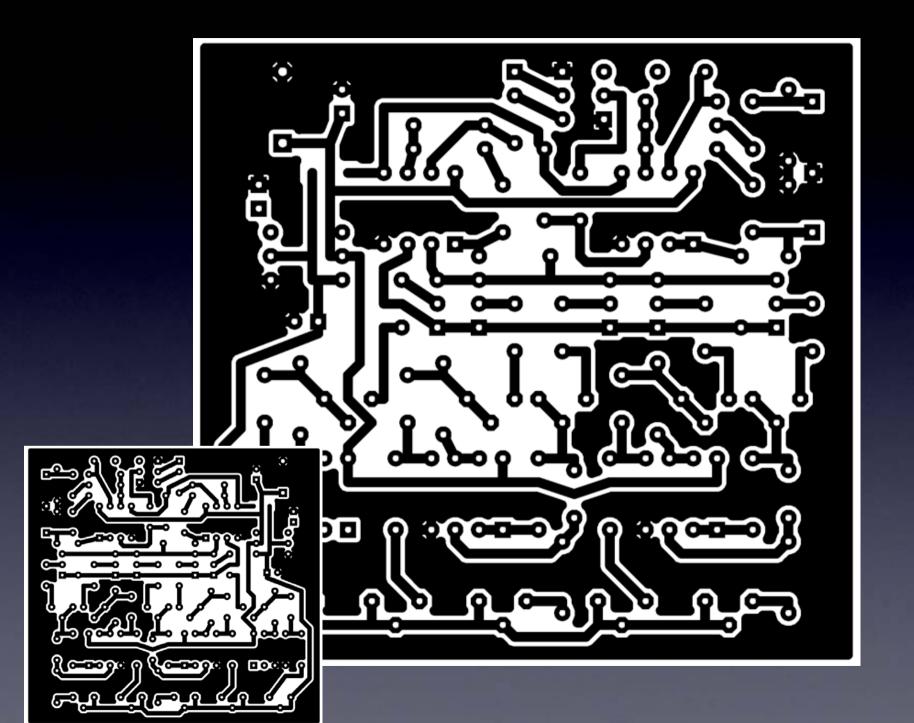






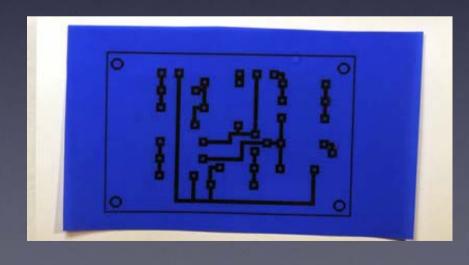


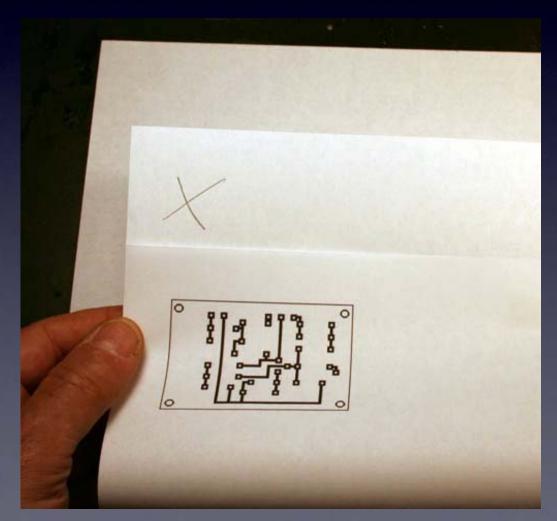




## Printing the Transfer

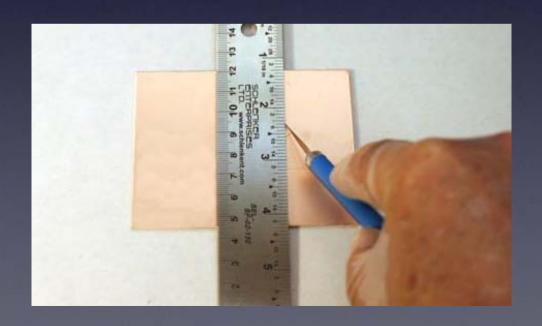
- Techniks Press n Peel Blue
- Laser Printer ONLY
- Print Twice

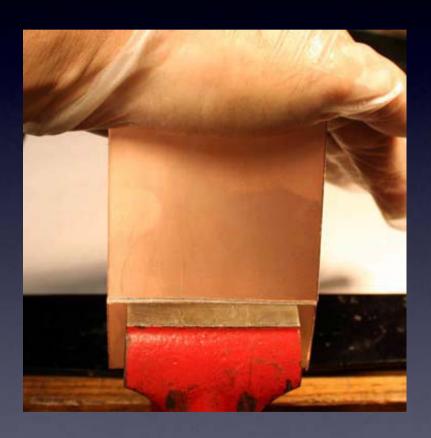




# Trimming Board

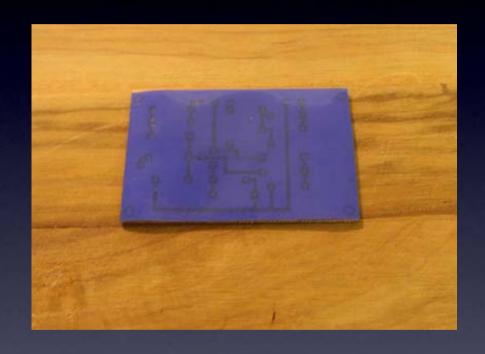
- Score and Snap
- Saw/Dremel
- Fiberglass!





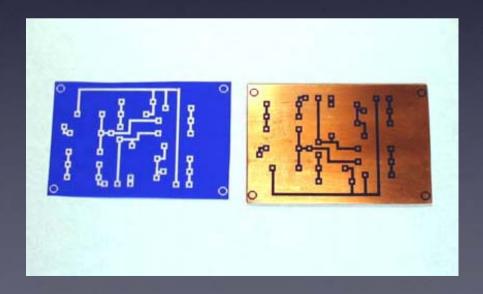
## Ironing

- Copper Clad FR-4
- Single Sided
- Polyester Setting
- Preheat Board
- Be Patient

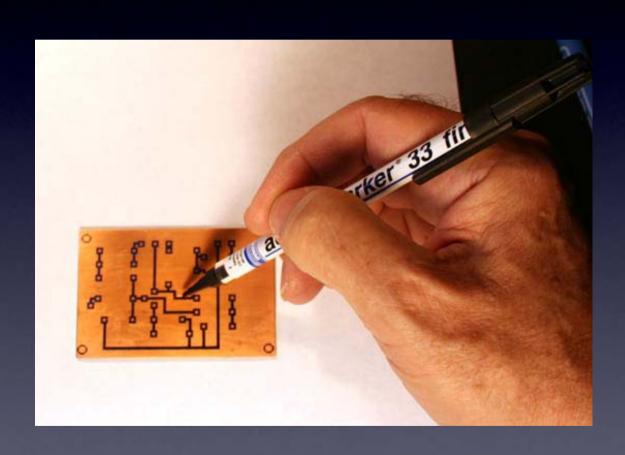


#### Removal

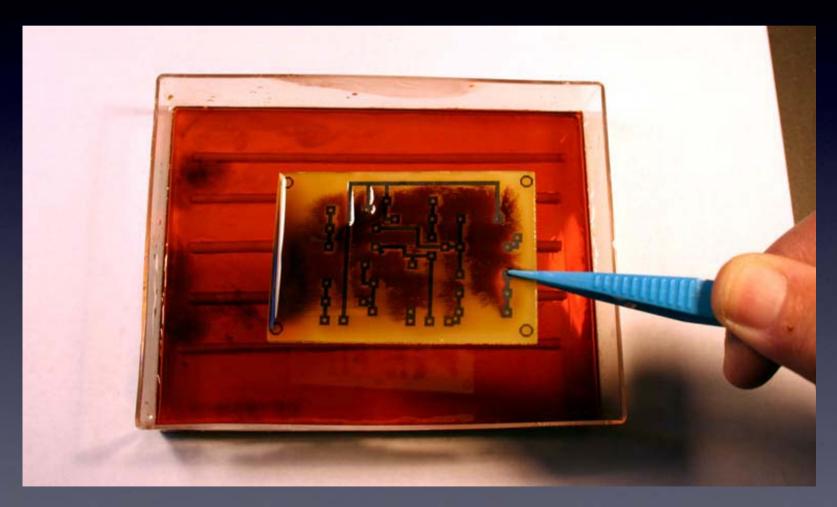
- Quench under running water
- Carefully lift from one corner



## Quick Fixes

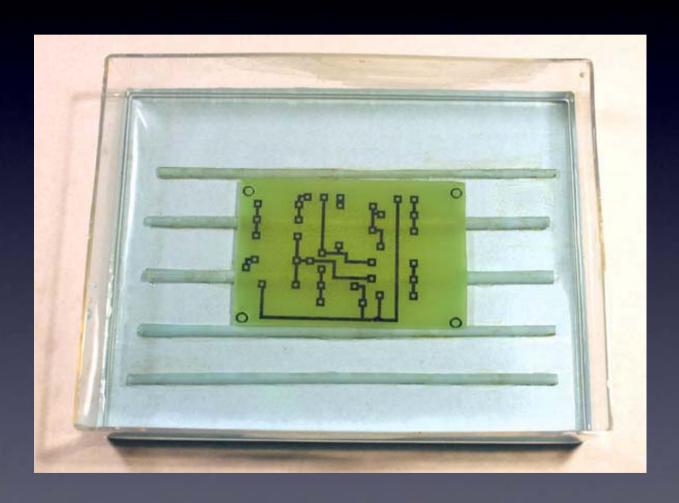


## Etching



Ferric Chloride

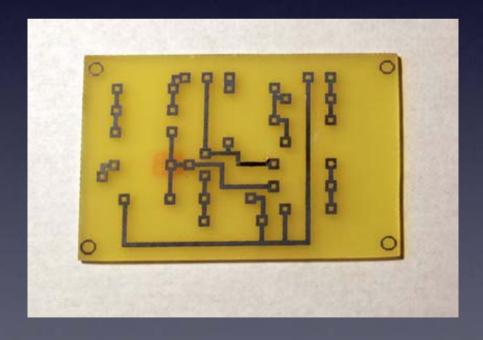
## Etching

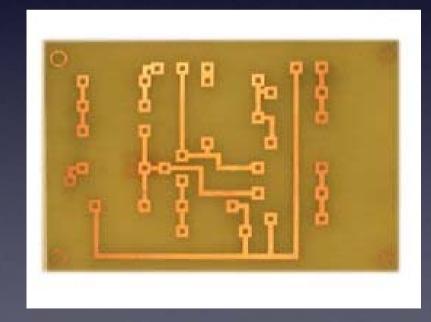


Sodium Persulfate

#### Clean Up

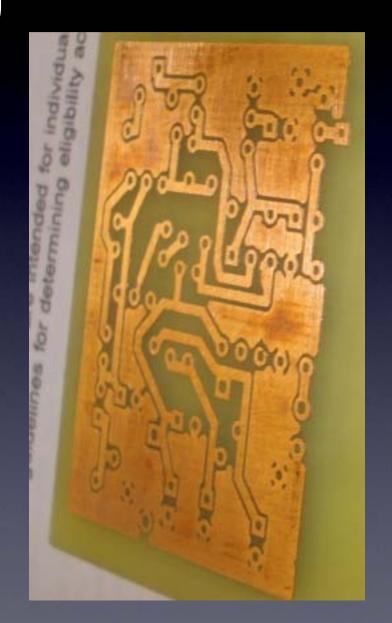
- Sand away Resist
- Strip with Acetone





### Drilling

- "Wire Gauge" Drills
- No. 59 or 60
- Drill Press
- Much Faster than Drilling Metal
- Fiber Glass Precaution



#### The End

http://www.smallbearelec.com/HowTos/DirectPCBoards/DirectPCBoards.htm

