

Touch & Print

• *Design* • *Create* • *Personalise*

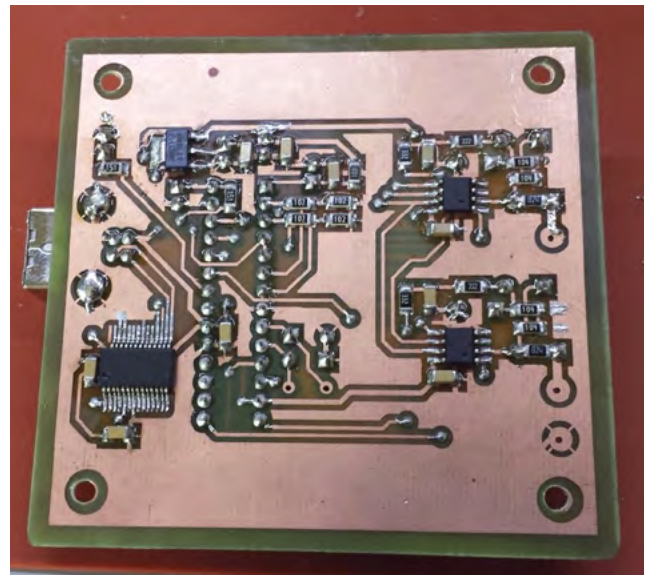
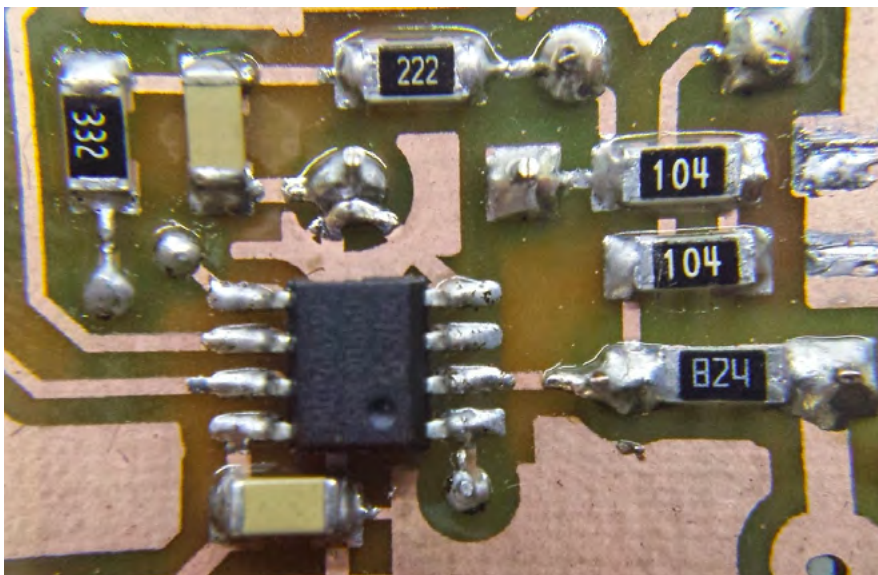
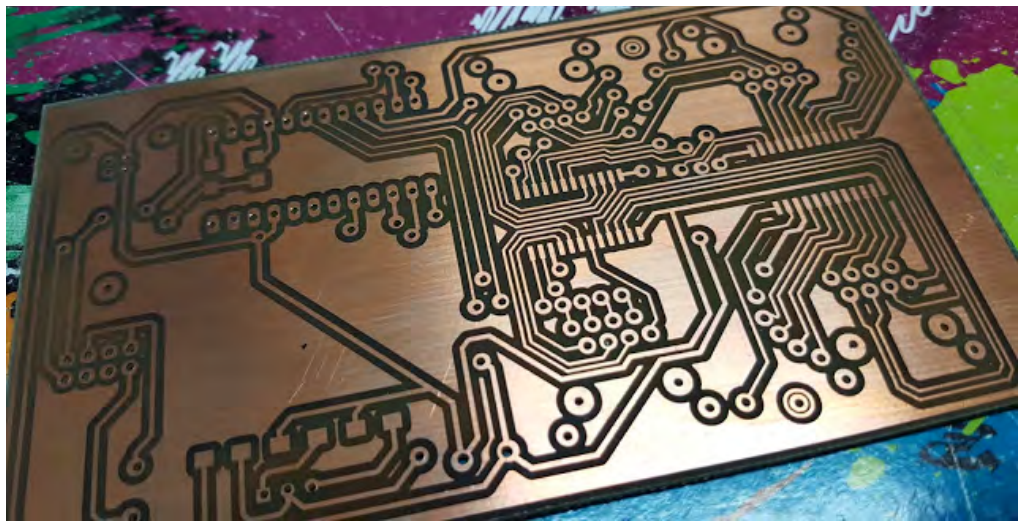
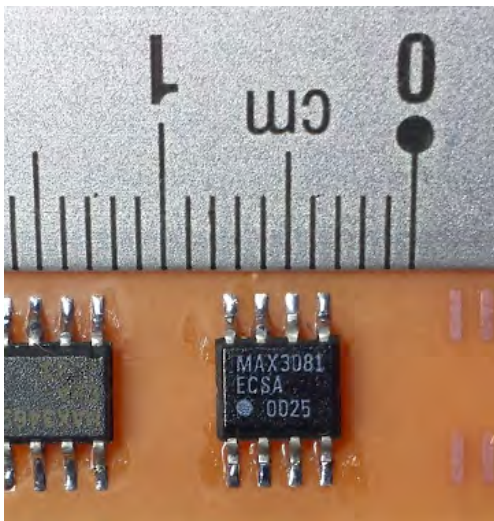


Creating PCBs with
Heat Transfer and
Household Chemicals

Overview

The arduino has enable makers to create electronic projects with ease. This is usually done on a breadboard with wires hanging out. Making your own DIY PCB is easy and safe using a heat press and transfer media. This allows the maker to make his electronic project become more permanant and stable.

Example Gallery



Equipment List

To create a DIY PCB using heat transfer, you will need the following equipments

Colour Laser Printer

The colour laser printer is used to print the circuit trace onto the CPM transfer media

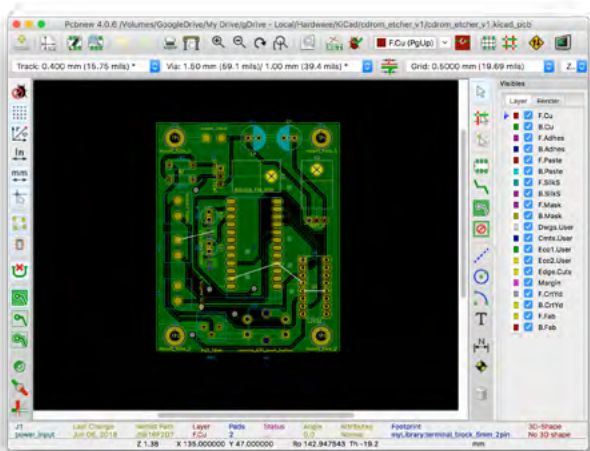
CPM Transfer Media

The secret to getting a perfect transfer of the toner from the paper to the blank PCB board is to use TheMagicTouch CPM transfer media. CPM is a special transfer media that is meant for transfer of toner onto non-fabric surfaces such as a PCB board.

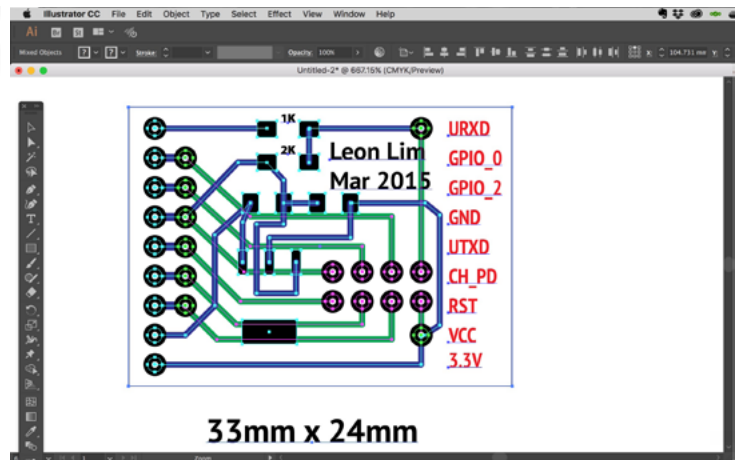
Heat Press Machine

The other key to getting a perfect transfer is to use a heat press machine. Using a heat press machine will give consistent temperature and pressure to the transfer printing process.

How Does It Work?

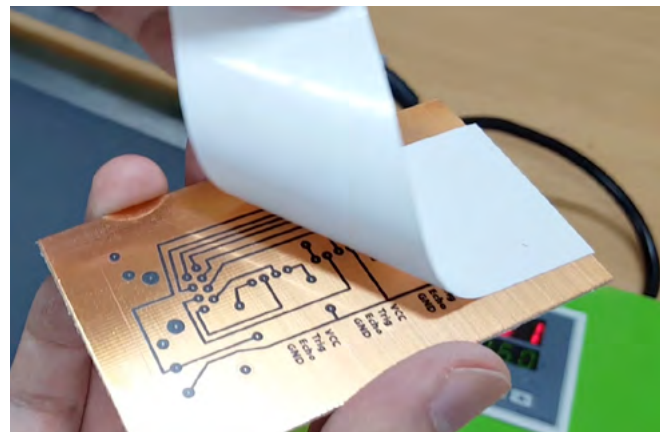
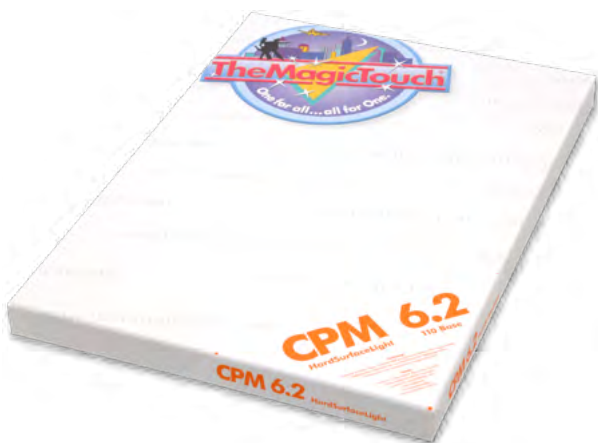


KiCAD



Adobe Illustrator

1. The PCB layout is first created. You can choose to use a professional PCB software such as EAGLE or KICAD. Or you are only doing a simple circuit board, you can choose to use a simple graphic software to draw the circuit lines..



2. Print out the PCB trace onto CPM 6.2 transfer media using a colour laser printer. Next, use a heatpress to transfer the image onto a blank PCB board. What will happen is that the printer toner will act as a mask / protection. The exposed copper will be etched away and the areas that is covered with the printer toner will be protected.



Vineger



Salt

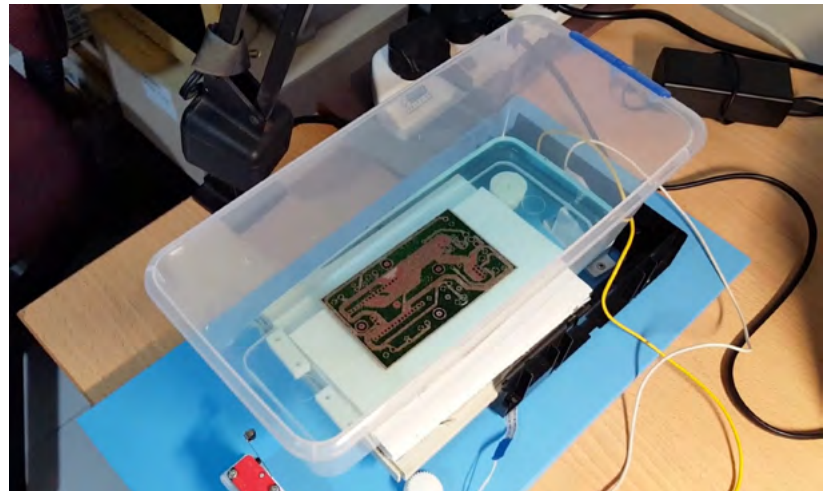


Hydrogen Peroxide

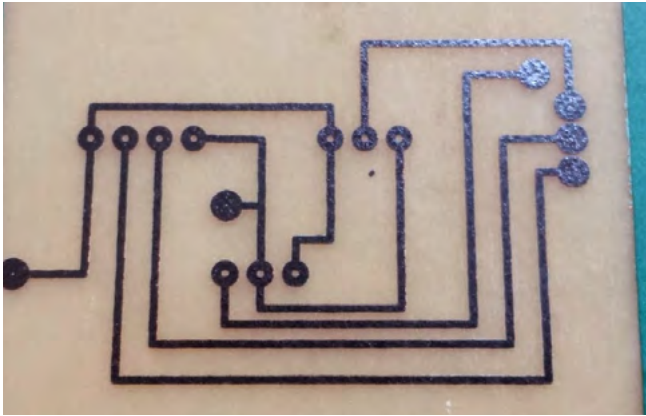
3. Next, we will etch the PCB board. There is no need for any harmful chemicals as we will be using household chemicals to achieve the result.

You will need 3 main ingredients.

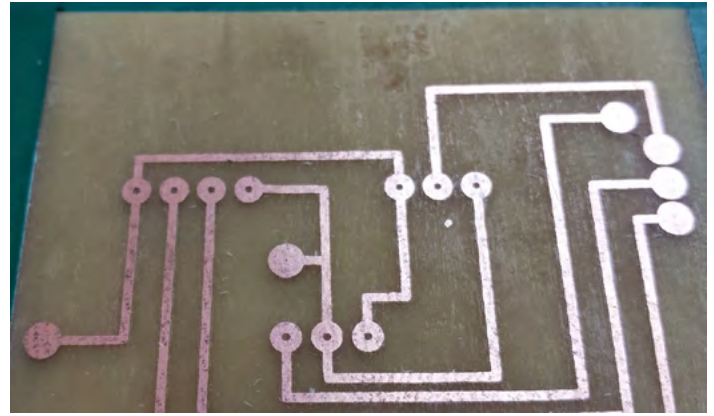
1. Vineger (You can get this at a Supermarket)
2. Table Salt (You can get this at a Supermarket)
3. Hydrogen Peroxide (You can get this at the Pharmacy)



4. Put the PCB into the etching solution to start the etching process. You will need to either use a agitator machine or manually use a brush/sponge to remove the copper that is etched away.



Finished Etching : Before removing toner



After Removing Toner

5. After the etching process is complete, you will be left with the trace that you want with the toner on top. To remove the printer toner, just use a solvent, or paint thinner and wipe off the toner and you have made your circuit board!!

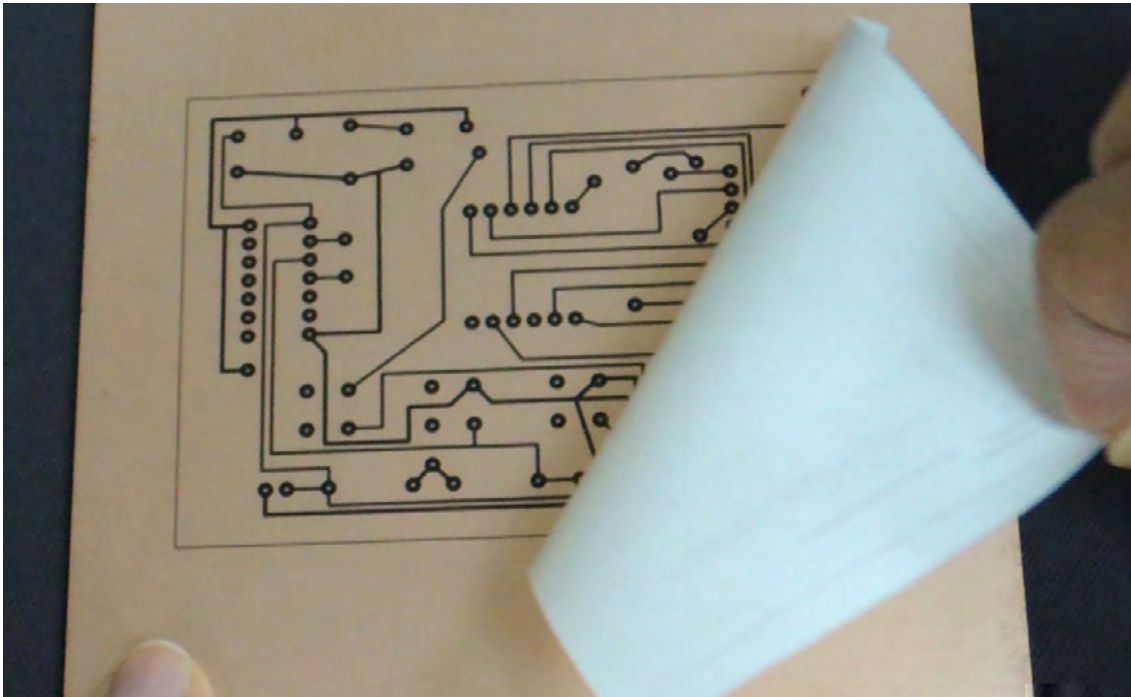
6. Next, drill the holes that you need with a small drill such as the Dremel 4000 and then solder up the components like you would in a normal circuit board.



Visit our webpage to find out more

https://www.themagictouch.com.sg/transfer_media/laser/cpm

Video Links



Toner transfer on a PCB

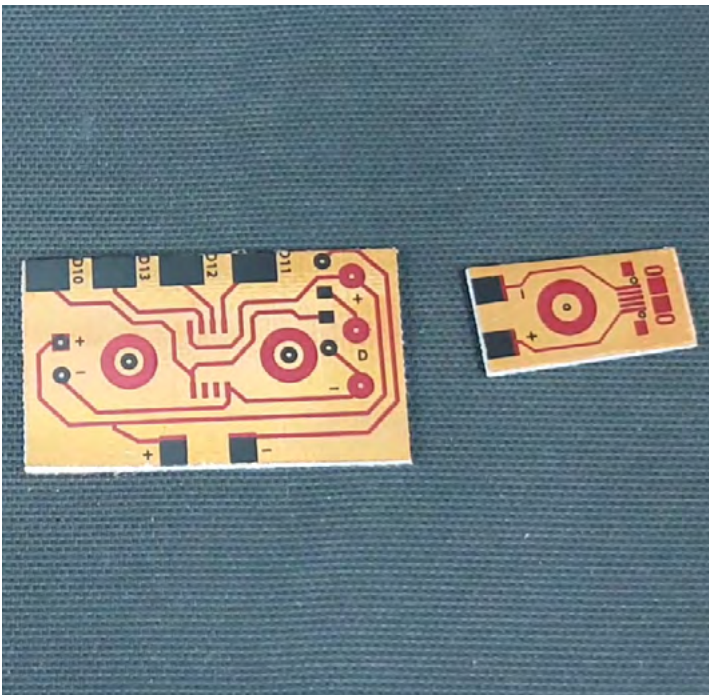
This video shows how can create your own PCB Boards by using TheMagicTouch CPM transfer media to get a perfect transfer everytime.



Watch video

<https://www.themagictouch.com.sg/videos/play/48>

Video Links



Custom made PCB for infinity mirror project

This video demonstrates how we create a special PCB board to drive the neopixels LED in the infinity mirror. The PCB has to be specially made so that it is small enough to fit into the frame. A regular arduino would have been too big.



Watch video

<https://www.themagictouch.com.sg/videos/play/63>

Frequently Asked Questions

Q : Can you do SMD components with this method ?

A : Yes. Most SMD components can be easily done including 1206, SOIC , QFP.

Q : Can you do double sided PCB ?

A : Yes. Vias have to be connected by soldering a wire from the top side to the bottom side. However, the Vias have to be larger than the usual Vias.

Q : What is the smallest component footprint?

A : To date the smallest component footprint attempted is a QFN chip.

Q : How long does the etching process take?

A : Typical etching time is usually about 15-20 mins.

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