

PCB “FAB-IN-A-Box”

Our “Direct Etch” technique enables you to transfer toner printed images in minutes from any conventional laser printer with high etch precision.

Make SINGLE and DOUBLE-sided circuit boards up to 8”x10” in under 10 minutes with trace widths down to .005” using any standard 1,200dpi B&W laser printer (or conventional photo-static copier).

There is also a “MINI” kit. See contents below for differences in the two kits.

Make Your Own PCB's In Minutes!

PCB FAB-IN-A-BOX

Create high quality single and double-sided circuit boards using any laser printer* or photo-copier in just a few minutes!

Used by...

- Hobbyists
- Midnight Engineers
- Educators
- R&D Labs
- Commercial Engineers

From simple single-sided thru-hole circuits to advanced double-sided and SMT boards, as easy as 1, 2,3!

1. Design...

2. Print...

3. Transfer...

Simple, Fast and Efficient!

< Photo courtesy of Erik Walhinsen, Portland, OR. This double-sided board is a scant 1.5" diameter drawn with .008" traces for a TQFP-32 and LCC-20 chips

Full Kit:

- **Toner Transfer Paper:**
20-sheets, 8-1/2" x 11" (2 TTP packs)
- **GreenTRF:**
Toner Reactive Foil, 8" wide x 15' long
Seals toner images for pit-free etching
- **White TRF:**
Toner Reactive Foil, 8" wide x 15' long
Converts silkscreen layer to white
- **Blank PCB Boards:**
FR-4 / G10 Laminate , 1/2oz Copper
2ea 8"x10" .032" SINGLE-Sided
2ea 8"x10" .032" DOUBLE-Sided
- **Pre-Printed Test Images:**
Validates printer's performance
Acetate sheet for iron calibration

Mini Kit:

- **Toner Transfer Paper:**
10-sheets, 8-1/2" x 11" (1 TTP pack)
- **GreenTRF:**
Toner Reactive Foil, 8" wide x 15' long
Seals toner image for pit-free etching
- **Blank PCB Boards:**
FR-4 / G10 Laminate , 1/2oz Copper
4ea 6" x 8" .032" SINGLE-Sided
4ea 6" x 8" .032" DOUBLE-Sided
- **Pre-Printed Test Images:**
Validates printer's performance
Acetate sheet for iron calibration

ALL “PulsarProFX” PRODUCTS:

KITS:

- PCB “Fab-In-A-Box” [50-1003](#)
- PCB “Fab-In-A-Box” (MINI kit) [50-1006](#)
- Combo (PCB + DecalPro) [50-1004](#)
- DecalPRO (10min Graphics) [50-1001](#)

LAMINATOR:

- Applicator (12” 120 vac) [50-1301C](#)

SUPPLIES:

- PAPER: Toner Transfer Paper [50-1101](#)
- FOIL: GreenTRF (Etching) [50-1225](#)
- FOIL: WhiteTRF (Silkscreen) [50-1226](#)
- FOILS: “DecalPro” [50-1201](#) ~ [50-1299](#)
- CARRIER BOARD: “DecalPro” [50-1503](#)

COPPER CLAD: 8” x 10”

- 2pk Rigid .032” Single Sided [50-1501](#)
- 2pk Rigid .032” Double Sided [50-1502](#)
- 2pk Flex .005” Single Sided [50-1504](#)
- 2pk Flex .005” Double Sided [50-1505](#)

COPPER CLAD: 6” x 8”

- 4pk Rigid .032” Single Sided [50-1507](#)
- 4pk Rigid .032” Double Sided [50-1508](#)
- 4pk Sampler (Mixed)... [50-1506](#)
(.005” SS+DS and .032” SS+DS)

No more photographic negatives, expensive pre-sensitized UV boards or developing chemistry. Just Design, Print, Transfer and etch... done!

A Simple, Fast and Efficient way to make single, double and Flex PCB's, both thru-hole and SMT!

NO

- ✓ **Negatives**
- ✓ **Darkroom**
- ✓ **Developing**

“Fine-Line” Capability!

Create circuit boards with traces as fine as .006” using any standard B&W laser printer* and a suitable 10mil type laminator**

“This project uses 0402 resistors, 0603 caps, and a 64-pin LQFP device on .008” traces w/.006” air-gap, .020” vias, and .010” via holes.”

Photos courtesy of David Coombs, Tucson, AZ

To achieve super-fine traces you must have fast etch times to eliminate under-cutting. By using 1/2oz copper (vs.conventional 1oz) coupled with an .032” fiberglass base, you get fast etch times, good rigidity, reduced overall project height and boards that cut using a standard paper cutter. (We also make paper-thin .005” FlexPCB which cuts with scissors!) See our website for our “Contact Etch” technique to etch these boards in under 2 minutes... without using an etching tank!

The Process Steps:

PRINT your PCB layout to the Toner Transfer Paper using any laser printer* (or conv. photo-copier)

FUSE the toner image to the copper board by using either a household iron or a suitable laminator**

WATER BATH for 1 minute to release the toner image from the Toner Transfer Paper

SEAL the toner by covering and fusing the GreenTRF the same way as the paper above

ETCH the board. When done, wipe off the toner and GreenTRF with Acetone... all done!

Customer Comments...

“Your system is truly excellent! Everything worked exactly as described. Having never created a pcb before, I couldn't believe how well they turned out.”

BRETT J, VANCOUVER, BC CANADA

“My company has a pcb router, but I have to get in line to use it. I have the budget to send stuff out, but that takes time. Sometimes, I just can't wait! I ordered your system with a laminator. Great stuff! I am delighted with the performance. Nothing but success.”

DAVID E, PH.D., ZEELAND, MI

Ideal for proto-types and short-run custom fabricated in-house products!

Photos courtesy of Tom Laureanno "www.dlirc.com"

Optional Steps

SILKSCREEN layer can be added to the component side after the board has been etched

WhiteTRF foil can be added over the black image for a more conventional silkscreened look

*** PRINTERS:** Use this product only on B&W laser printers (or conventional photo-static copiers). Note however, that BROTHER® and SAM-SUNG® laser printers do not work well with our process due to their non-standard, very high-temperature toner formulations.

**** IRON vs. LAMINATOR:** Household irons can be used to reliably transfer circuit images to copper-clad boards with traces down to .015” wide (after simple calibration). Finer traces require greater control over heat & pressure by using recommended pouch laminators. See our site for info at “PCBfx.com”.

4611 Crow Creek Dr, Colorado Springs, CO 80922-4615

For more information about our techniques we invite you to visit our main website at [PulsarProFX.com](#) or call us at (850) 926-2009, 9am-5pm MST