
COLOR BLASTED BADGE MAKING
How Hard Could It Be?

INTRO



ABHINAV PANDA

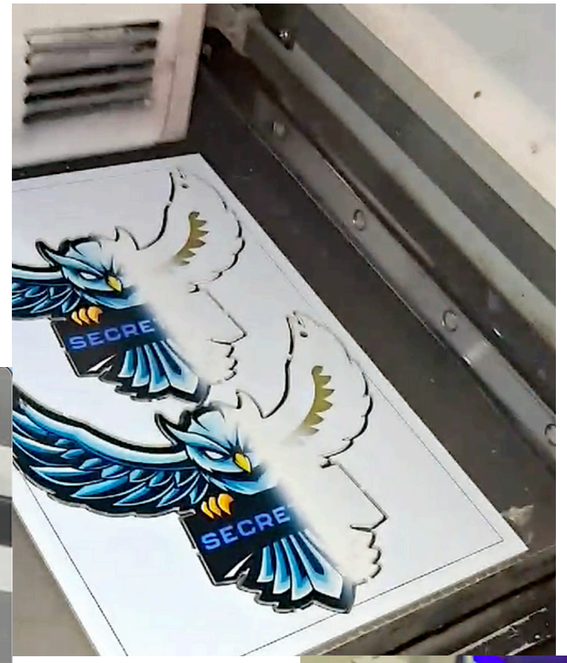
- Doing badgelife (almost) full-time for 8 years
- Hosted Hardware Villages across 13 countries
- Founder of Hackerware.io, a boutique badgelife lab

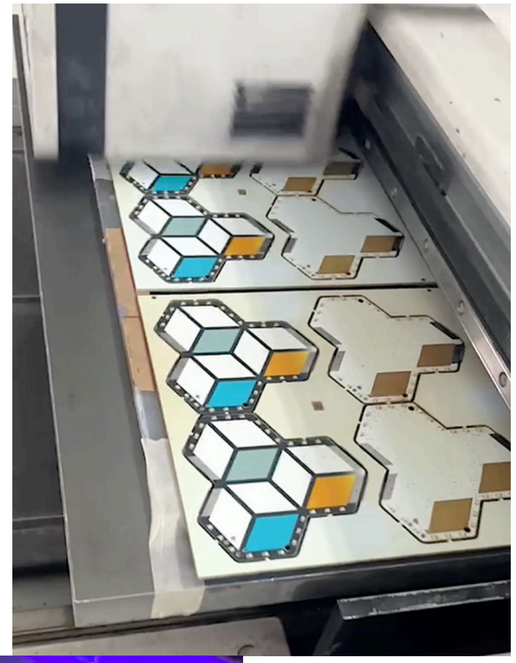
- Method: UV Printing

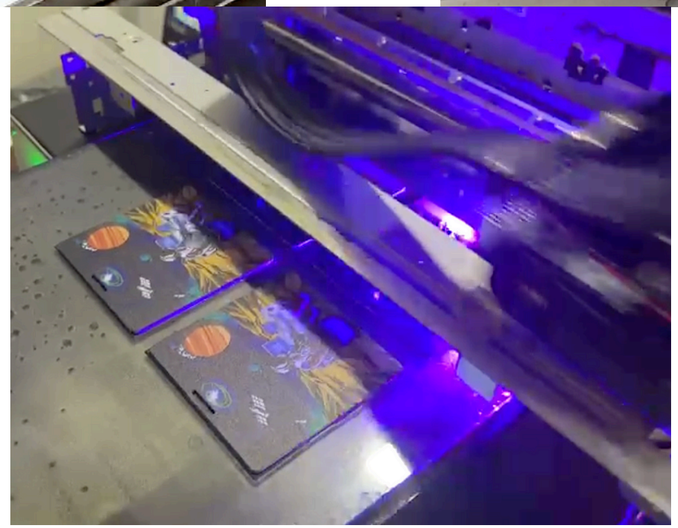
UV Printing











Examples

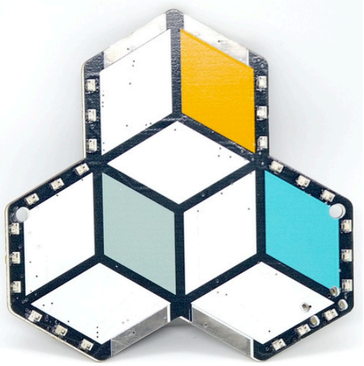




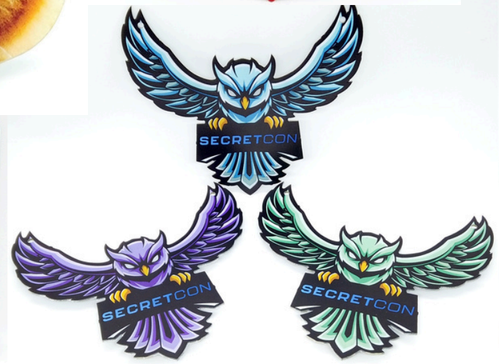





BSIDES
INDORE



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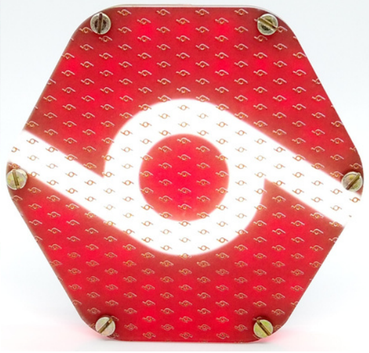


US
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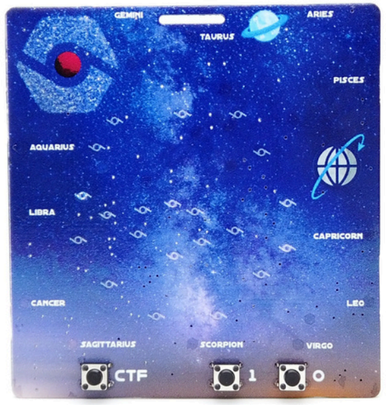
PACIFIC
HACKERS




BLACK GIRLS HACK

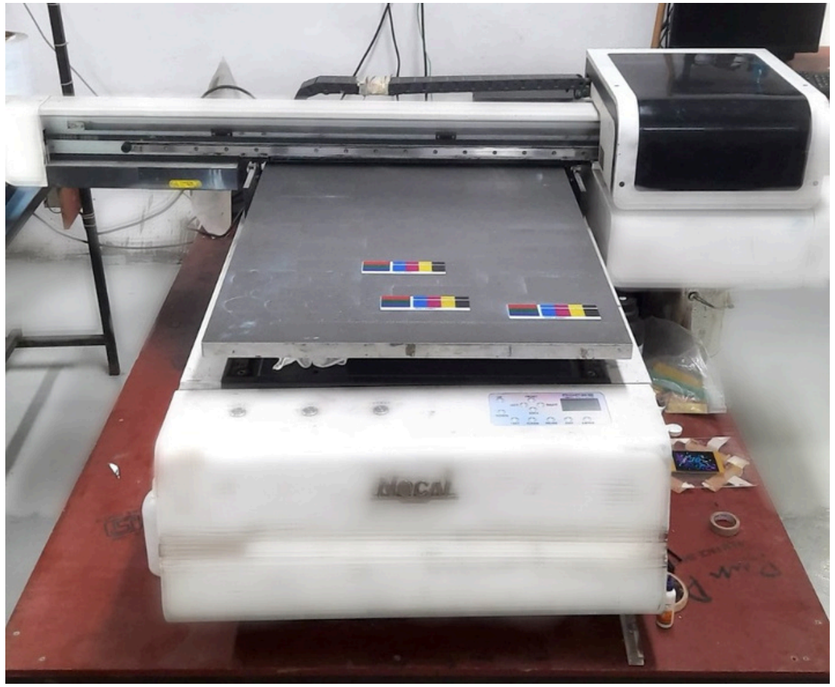

GEMINI
ARIES
TAURUS
PISCES
AQUARIUS
LIBRA
CAPRICORN
CANCER
LEO
SAGITTARIUS
SCORPION
VIRGO
CTF
1
0


HACK THE PLANET
HACKERWARE.IO


SANDBOX
RSAC 2023
Stronger
Together

Process

- Load PNG/PDF artwork in the machine software and adjust the print positions on the bed
- The time taken to print 2 feet x 3 feet (60 to 70 badges) is roughly 30-40 mins (Avg <1 min per badge)
- Some low-cost machines may need 10 - 15 min extra to cure the ink
- Use a jig for pre-assembled badges





Tips, Tricks, & Lessons

- UV Print layer can cover LED glow points
- Can easily hand solder after printing
- Reflow oven after printing might give a Yellowish tint in some cases
- Experiment with shades for colour correction
- The machine is high maintenance and needs to be run regularly to avoid ink clogging
- Might start a UV Printing & PCBA service at Hackerware



INTRO



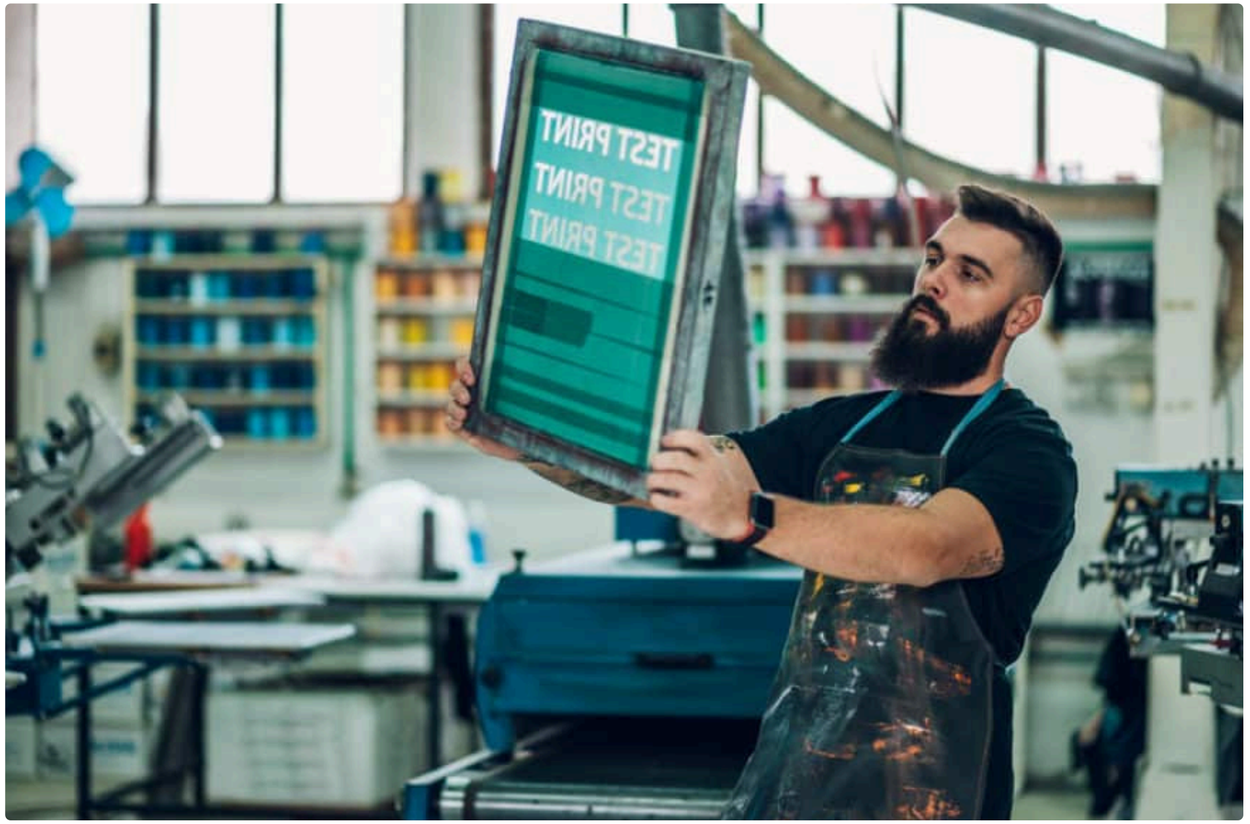
BRADÁN LANE

- UX Designer and User Research
- Hardware Hack (no formal training)
- eChallengeCoins (aosc.cc)
- DC540 and DCNextGen

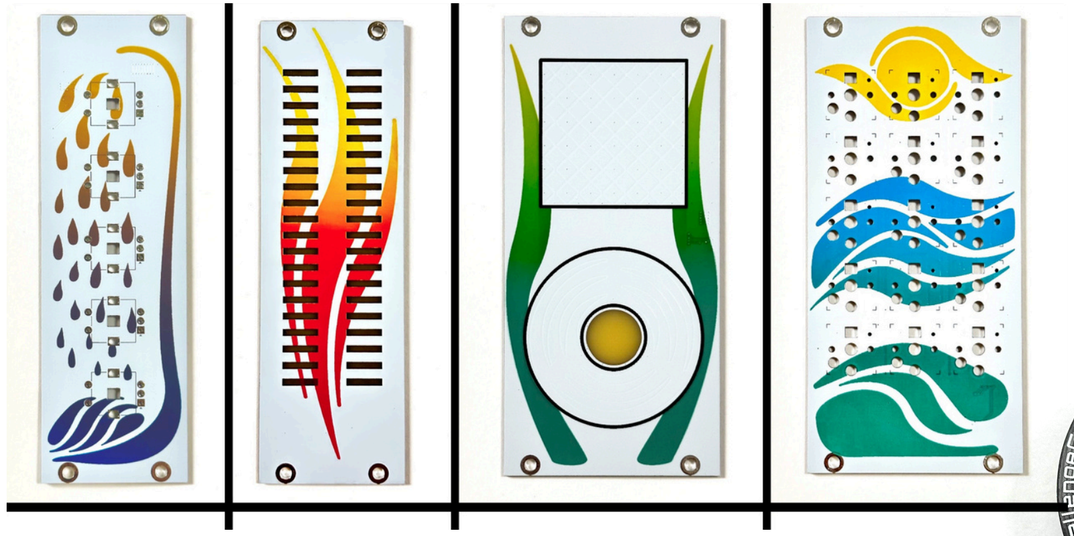
- Method: Traditional Silkscreening

Traditional Silkscreening





Examples




eChallengeCoin
@bradanlane


eChallengeCoin
@bradanlane


eChallengeCoin
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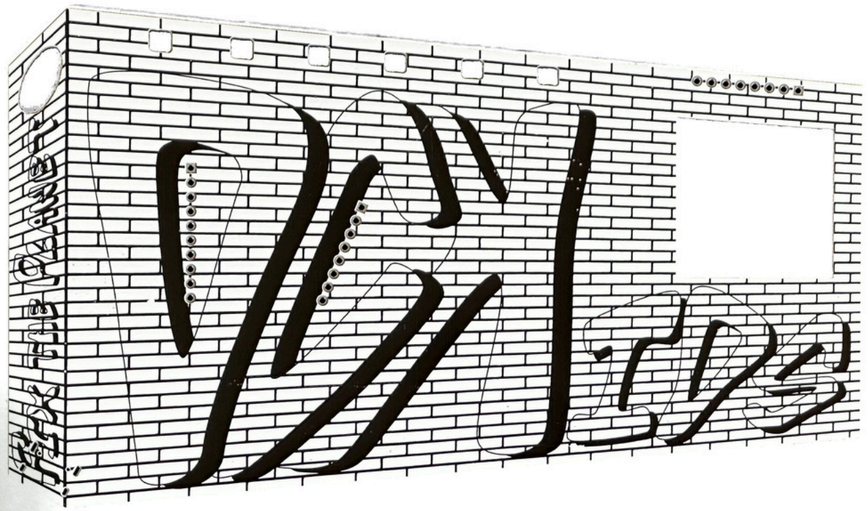
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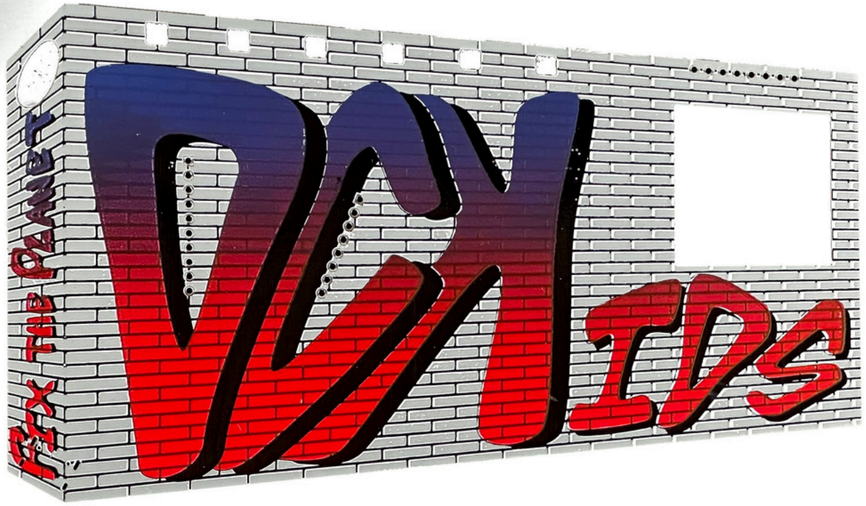
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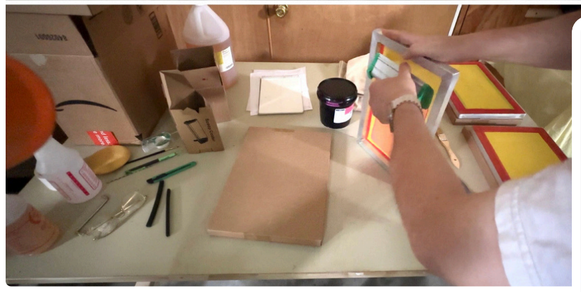
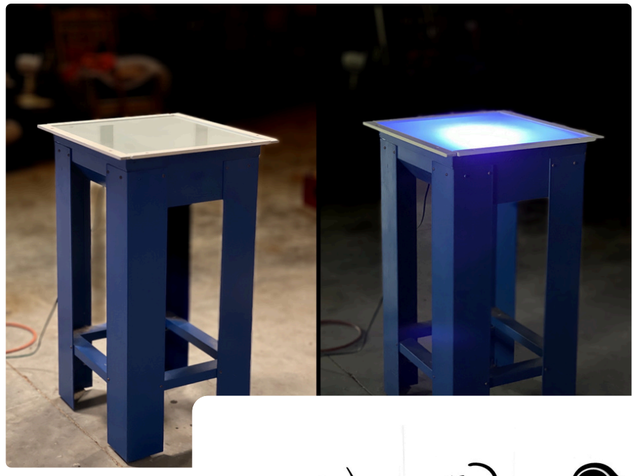
Process

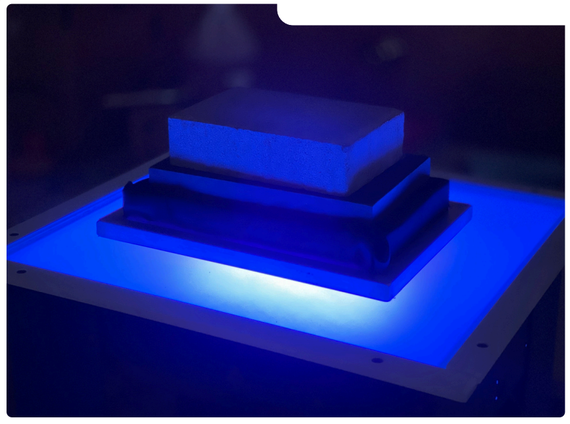


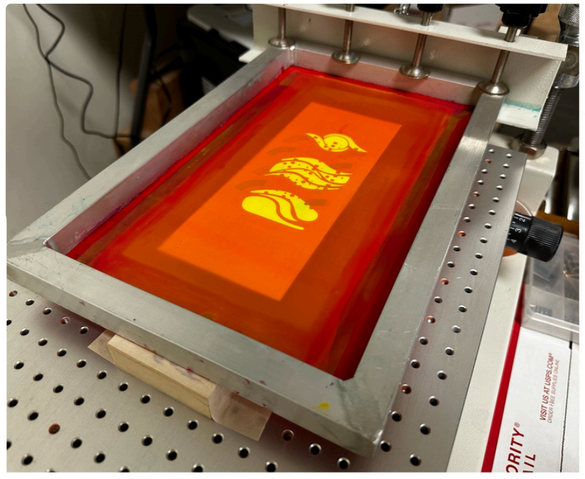


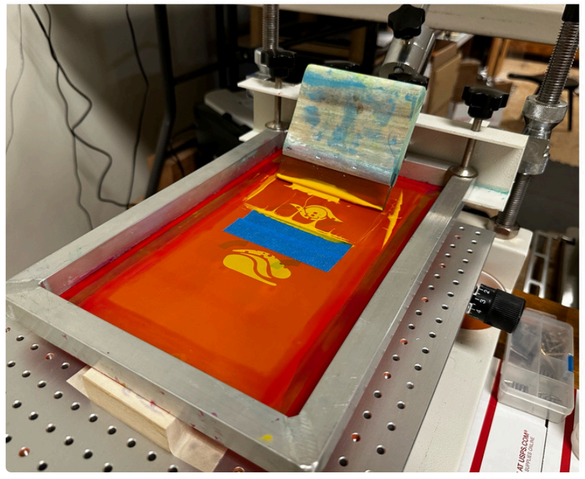


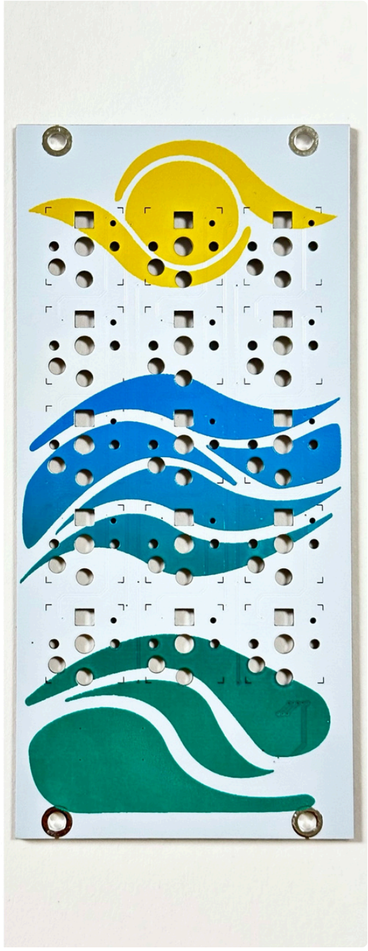












Tips, Tricks, & Lessons

- UV Emulsions & UV inks
  - not overly sensitive
- Ink curing needs LOADS of UV light
- Colors are analog, not digital
  - mixing is CMYK (not RGB)
- 305 mesh screens are best
- Split Fountain changes over time
- Silkscreening is an analog art
  - play with it, experiment, enjoy





INTRO



HAMSTER



- Engineer by day - also engineer by night
- Designed many badges and SAOs - dczia, dc801, etc
- Is glad cookie season isn’t until next year

Dye Sublimation

T-shirts, coffee mugs, etc

Cheap, easy to do at home

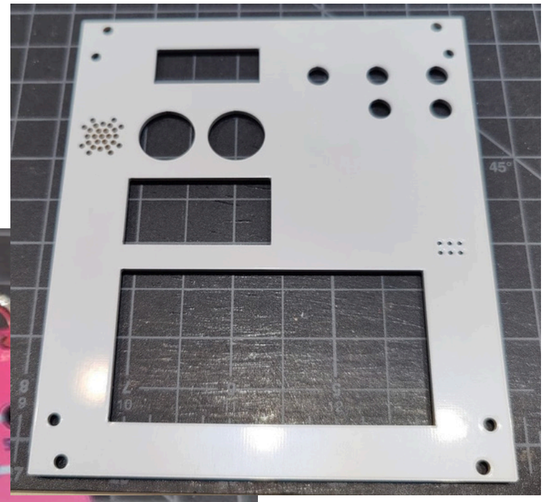
Minimal equipment





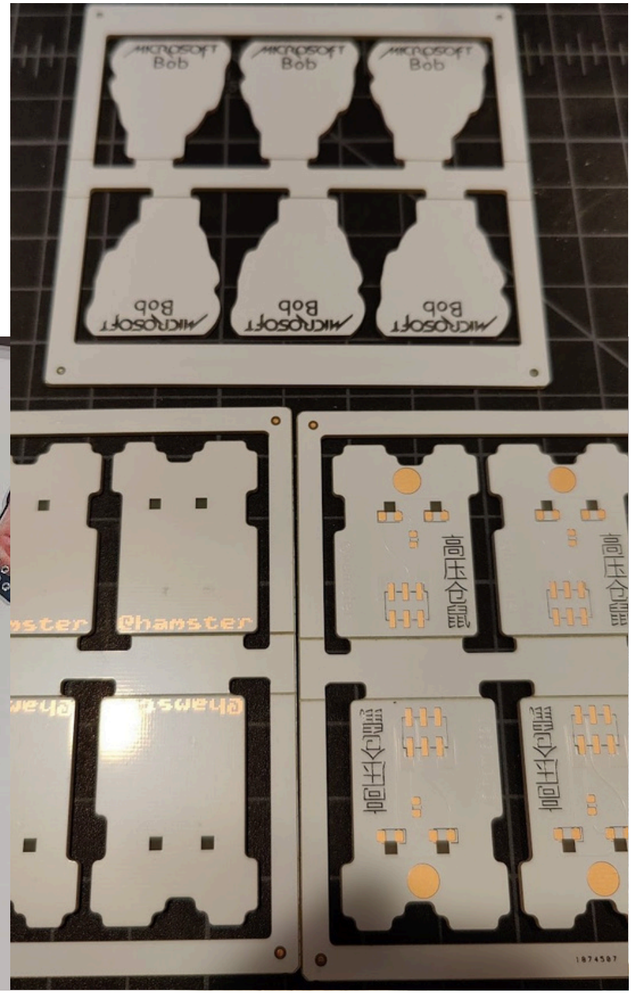
Examples


AUDIO OUT
MIDI
IN
OUT
SELECT
VOLUME
PLAY
FUNCTION
DCI Electric Sample




MICROSOFT
Bob


@hamster
@hamster


MICROSOFT
Bob
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Process

Buy dye sub ink and convert your inkjet printer

Print mirrored image onto dye sub paper

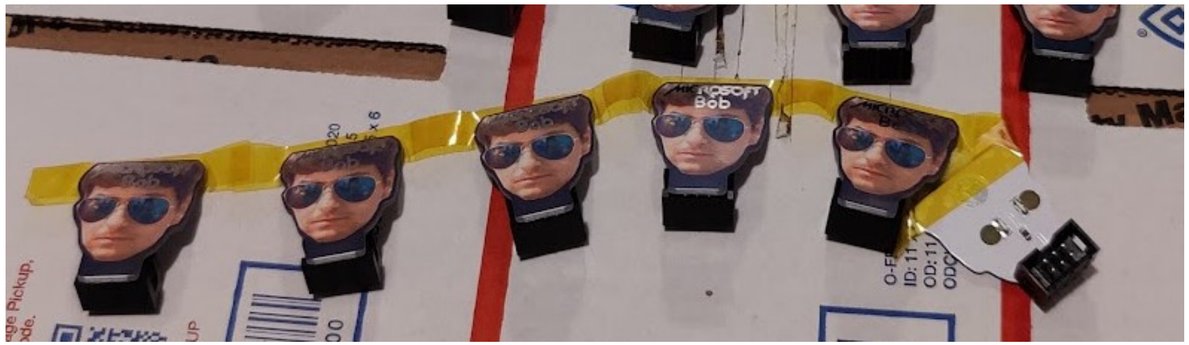
Populate PCB if needed

Tape PCB to paper with polyimide tape

Heat in heated press for 30 seconds or so at 360F







Tips, Tricks, & Lessons

Test heat and time settings

Can’t reflow solder after, will fade the color

Can rework or solder through hole after with careful soldering

Can do at home for less than $250 (heated press, ink, paper, cheap inkjet)



Panel Discussion

ASK
YOUR
QUESTIONS