

Build Your Own Hardware Wallet

(starting your own Firefly empire)

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Section 1

What is Firefly?



What is Firefly?

- Open-source firmware, open-hardware design, crypto hardware wallet
- Cost-effective (hopefully entirely free to consumers)
- Customize! Make it your own: animated GIFs? Pong? CryptoKitty Acrylic Frame?
- Making Hardware Wallets Fun! Coming soon: Tamagotchi SDK





Section 2

Assembly

Gather a Crew



For the mere cost of a couple pizzas, you can find some willing workers to knock out a couple hundred devices in an evening.





Set up your work space.

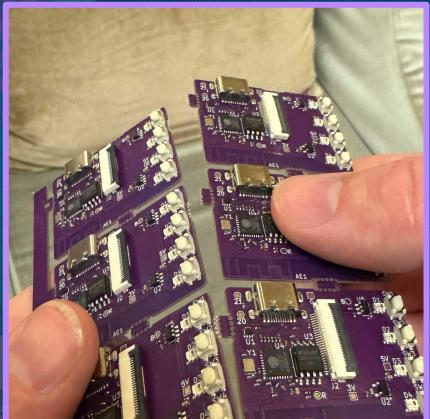
Start with an assortment of piles:

- PCB Panels
- De-panelled PCBs
- Pile of harnesses (the case)
- Trays of displays
- Complete devices
- Rejects (to be fuzed with later)

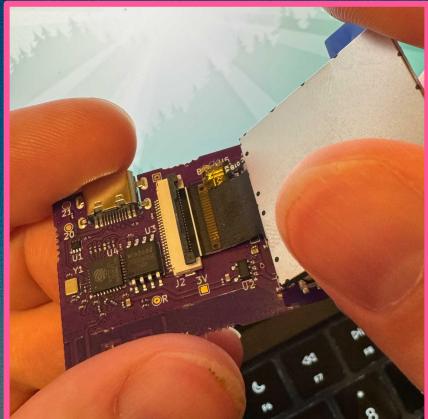


Three Easy Steps

1. De-panel



2. Connect screen



3. Snap into case



Section 3

Provisioning



```
~/Development/firefly/pixie-repl> node lib.esm/bin/provision
```

```
Connected to /dev/cu.usbmodem1101:
```

```
  - Chip: ESP32-C3 (v0.4; 16MB)
```

```
Flashing partition table (mutable attest NVS)...
```

```
Erasing attestation NVS partition...
```

```
Flashing bootloader...
```

```
Flashing Provision REPL firmware...
```

```
Generating on-device signing keypair...
```

```
  (finished in 8.683s)
```

```
Requesting attestation from Provisioning Service...
```

```
  (got S/N: 345)
```

```
Setting device info (model: 0x106, S/N: 345)...
```

```
Burning attestation key...
```

```
Resetting...
```

```
Verifying...
```

```
Replacing partition table (read-only attest NVS)...
```

```
Flashing factory firmware...
```

```
Provision Complete! (took 69.89s)
```





Section 4

Cost Break-Down

Costs (based on 180 devices)

PCB	\$0.50
PCBA (soldering, etc)	\$1.80
Components	\$2.50
“Case” (Harness)	\$2.20
Tariffs	\$1.00
Shipping	\$1.00
Total	\$9.00



Special Thanks

ENS DAO – Public Goods Working Group



For funding the first 2,000 devices! Public goods are good.

<https://github.com/firefly>

Thank you very much!

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