

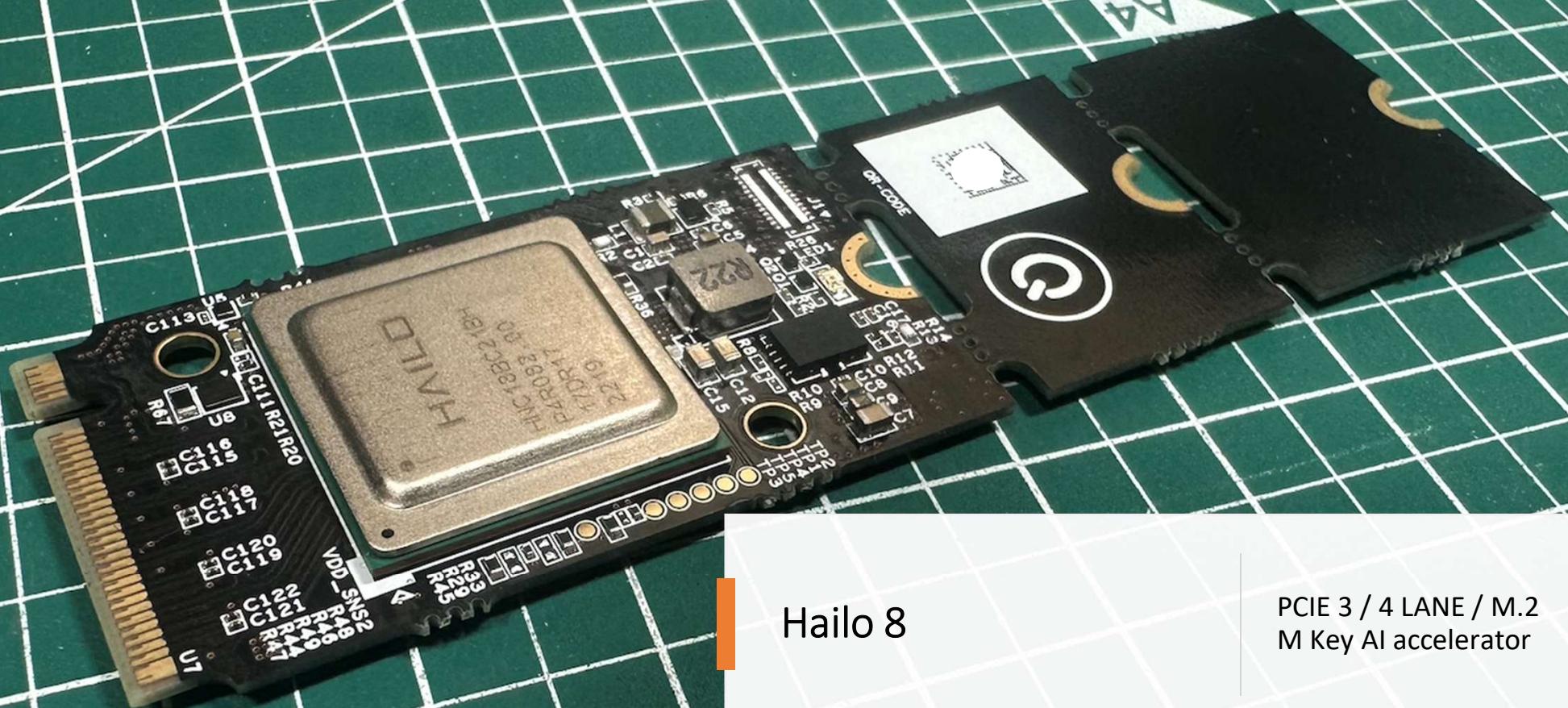
Custom Tiny AI PC

By Ceyhun Pempeci

Visit: www.republicofmakers.com
or github.com/republicofmakers



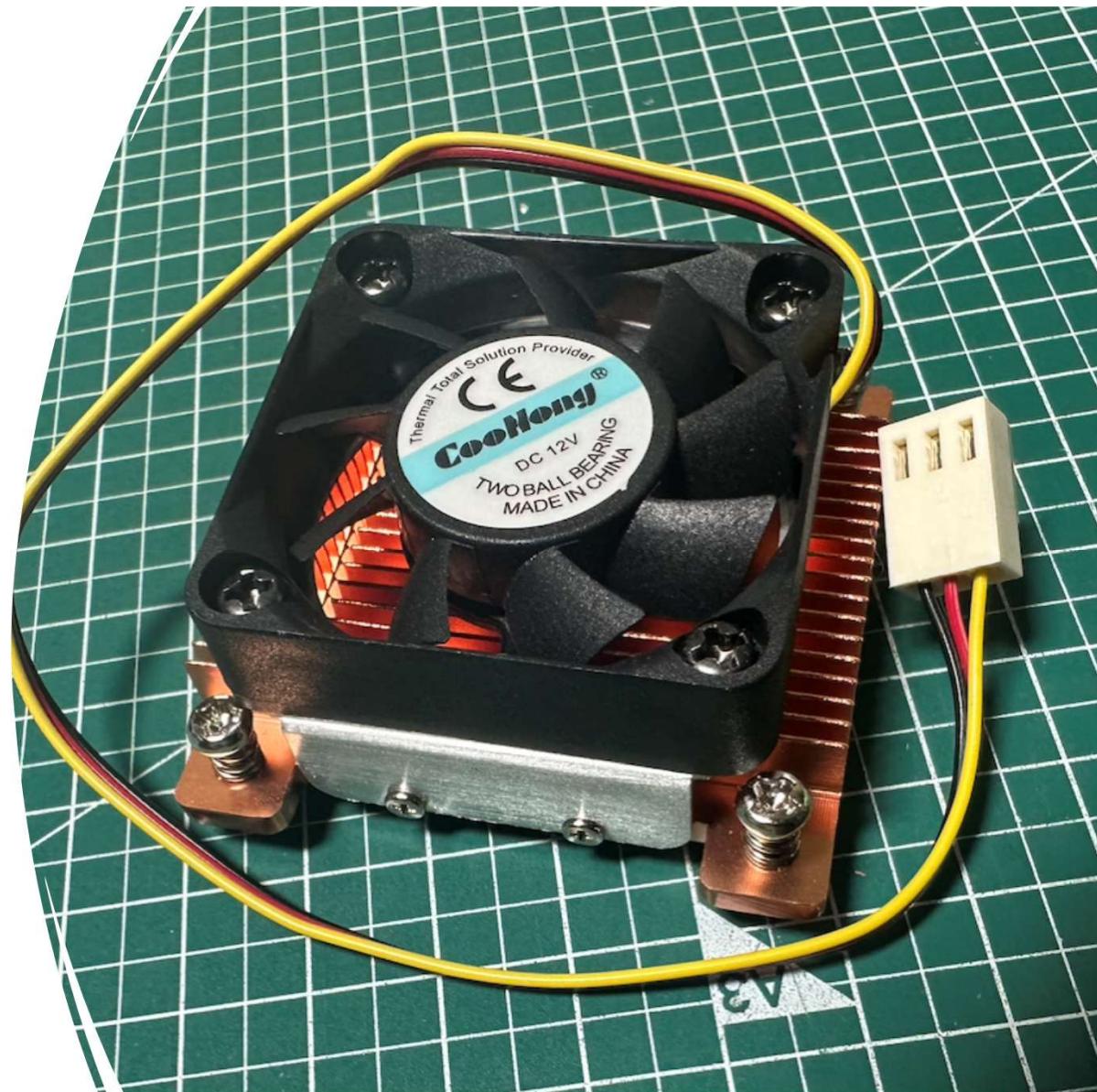
FJ8071504741823S
RMDM



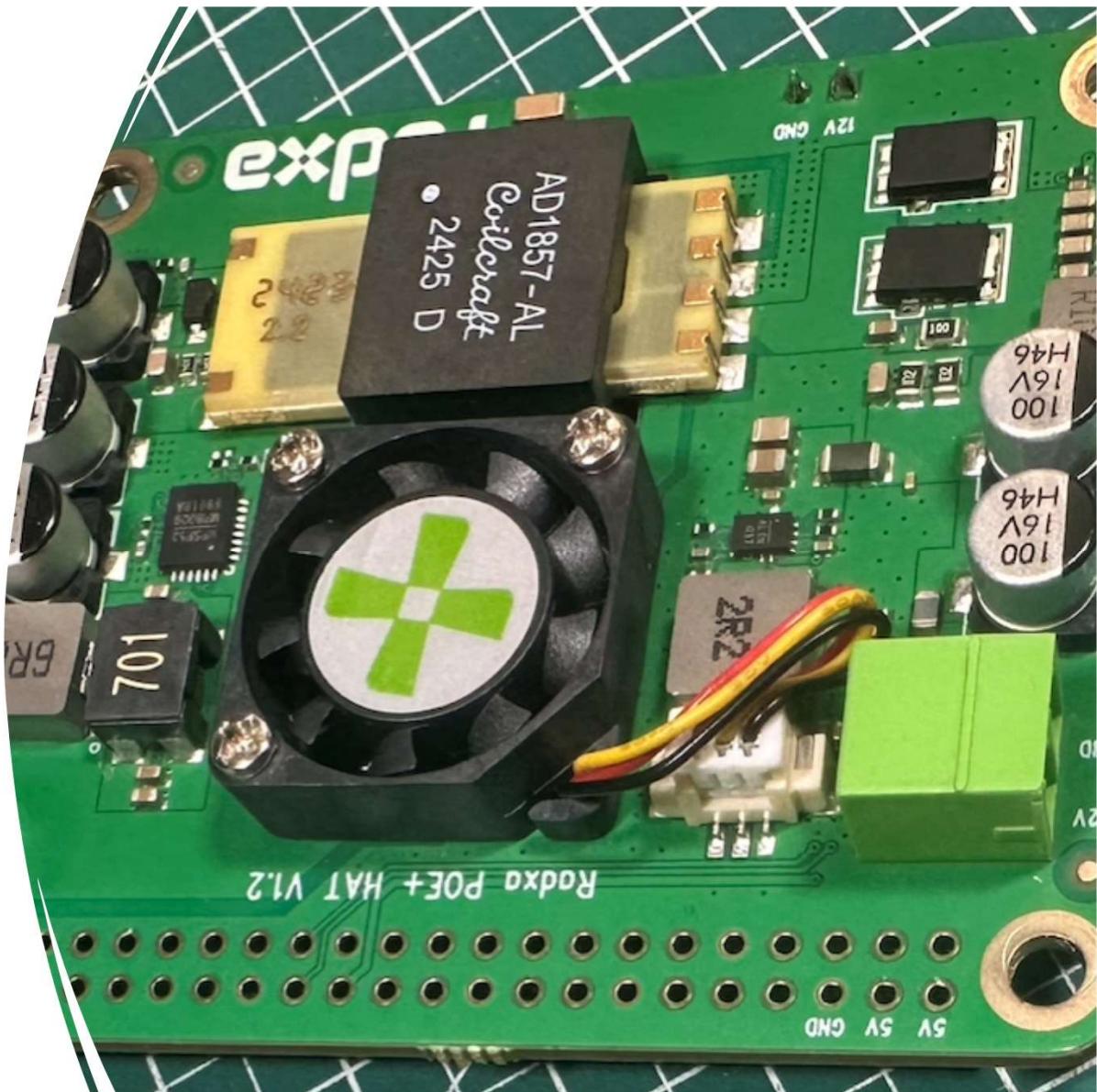
Hailo 8

PCIE 3 / 4 LANE / M.2
M Key AI accelerator

CPU Cooler
(brand:
CooNong)



Ethernet Hat



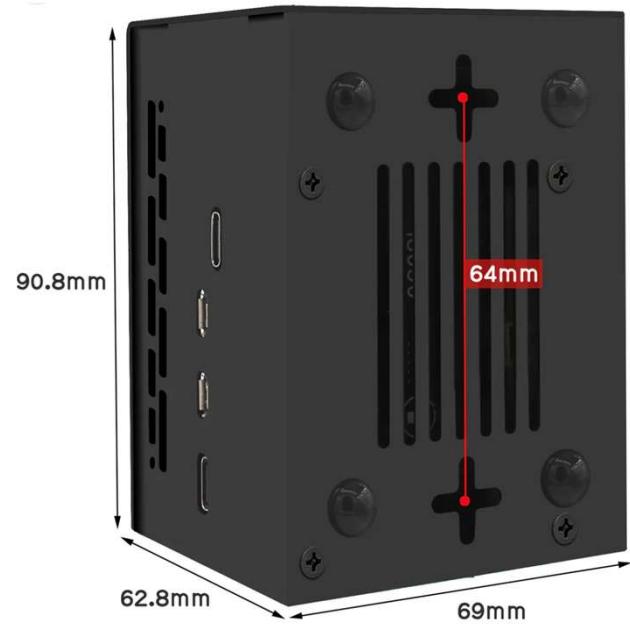
Noctua Fan

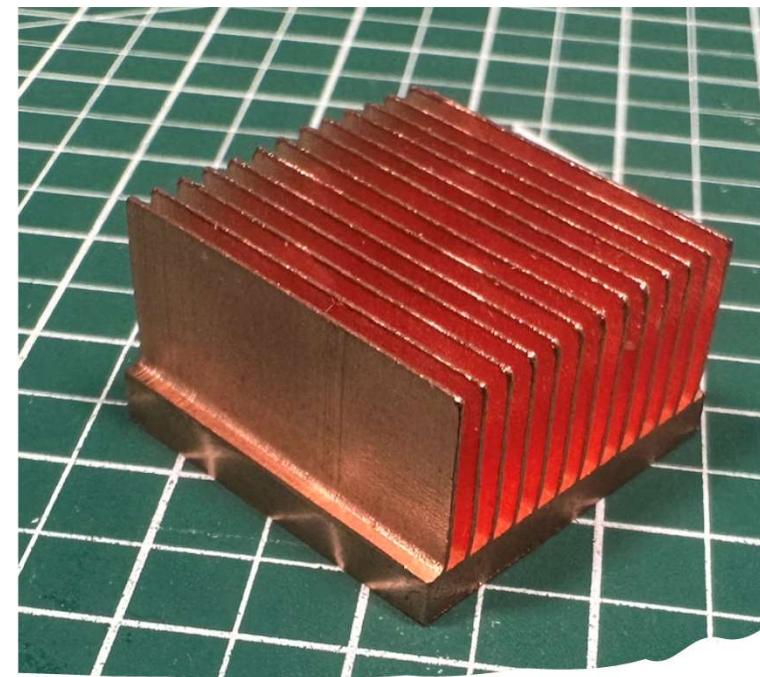
(Noctua nf-a4x10 5v)



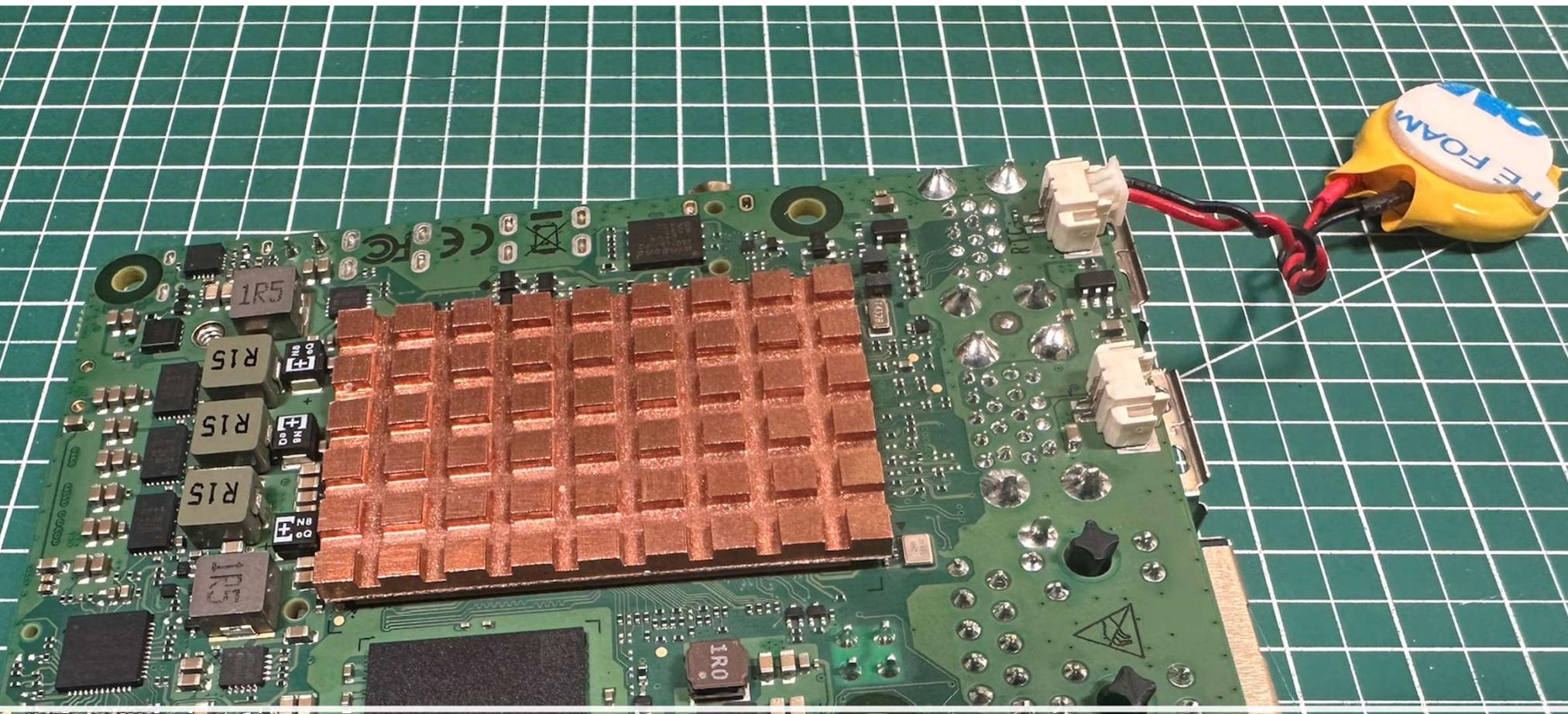
PC Case

(Geekworm X1200-C1)



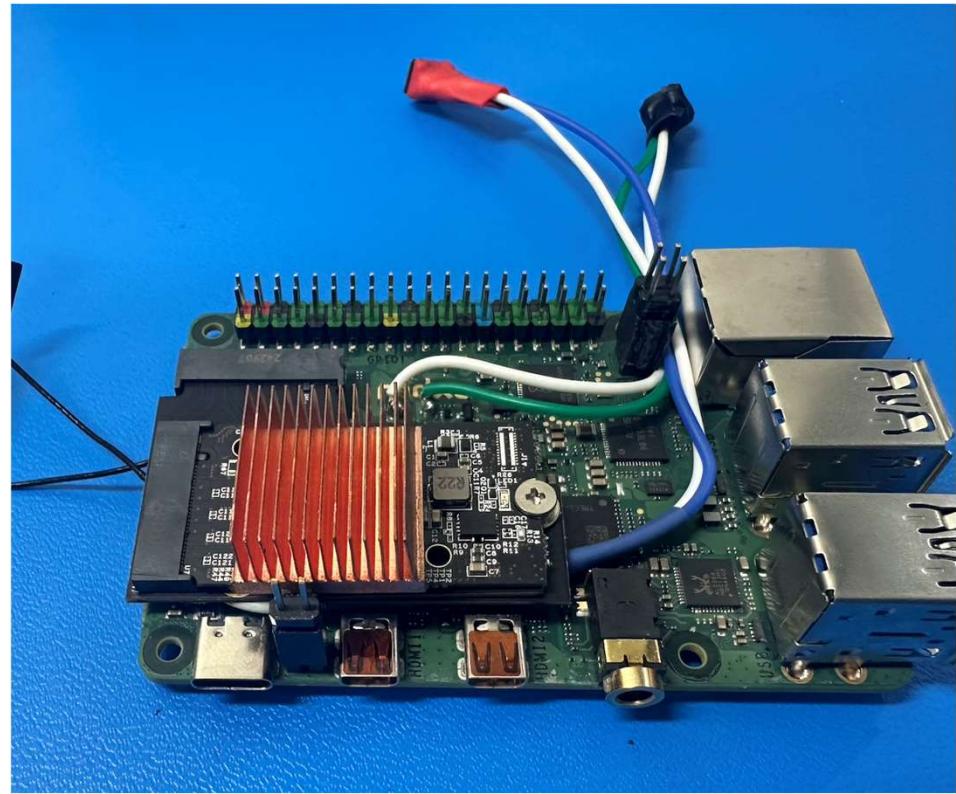
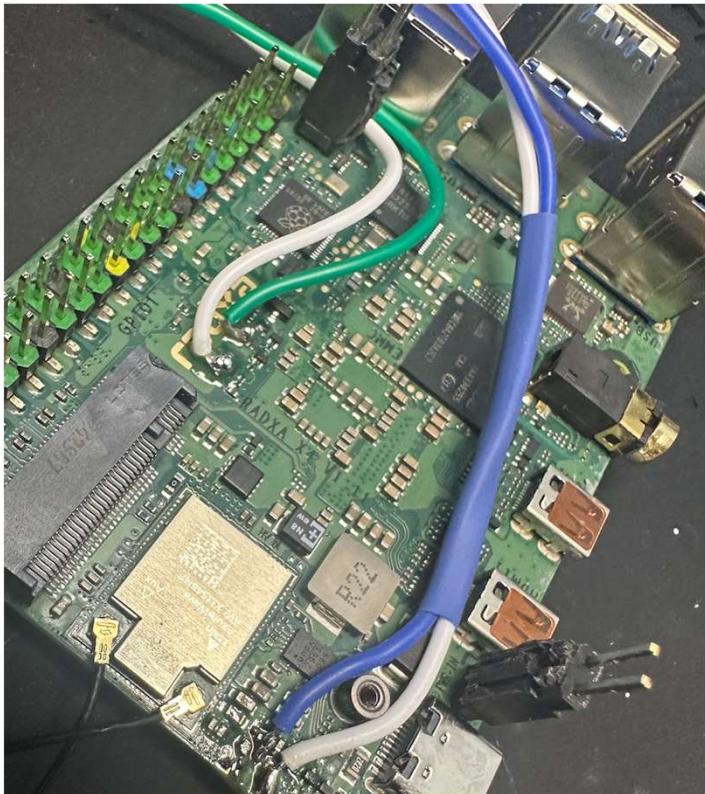


Install Hailo to Radxa N4



Install heat sink

Change Button locations

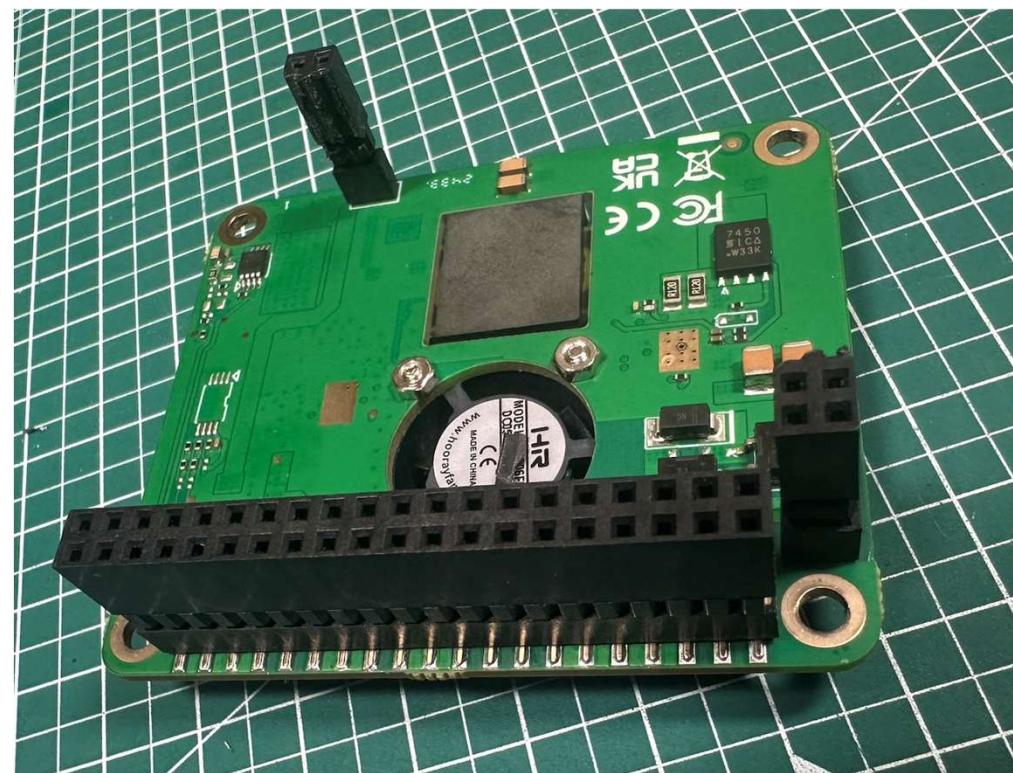




Install Noctua Fan

- Add 1.25 mm Connector

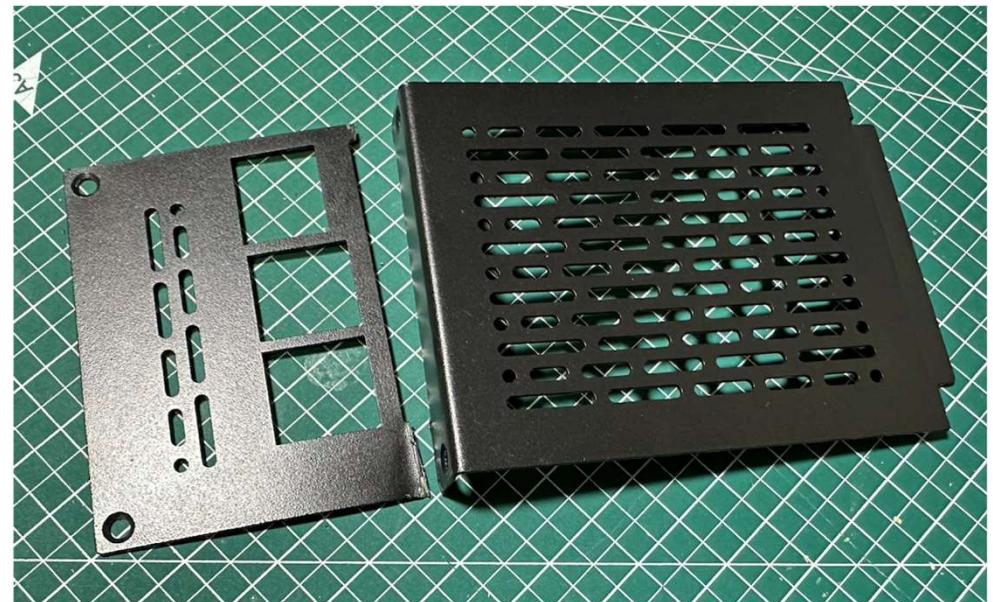
Increase height of POE



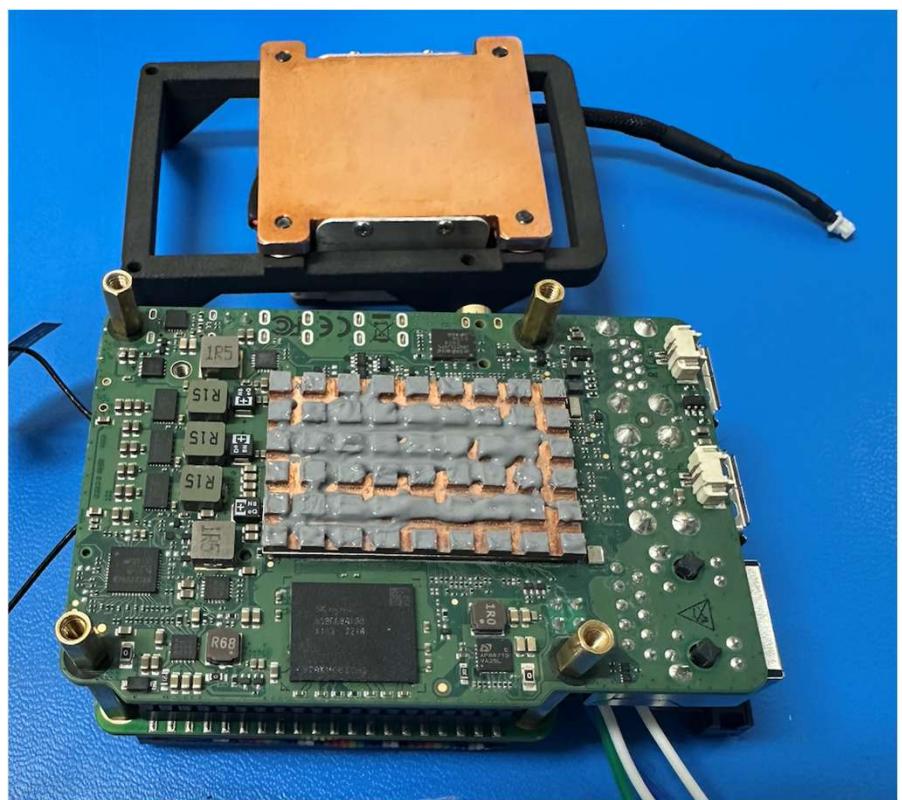
3D Print Parts for the Case



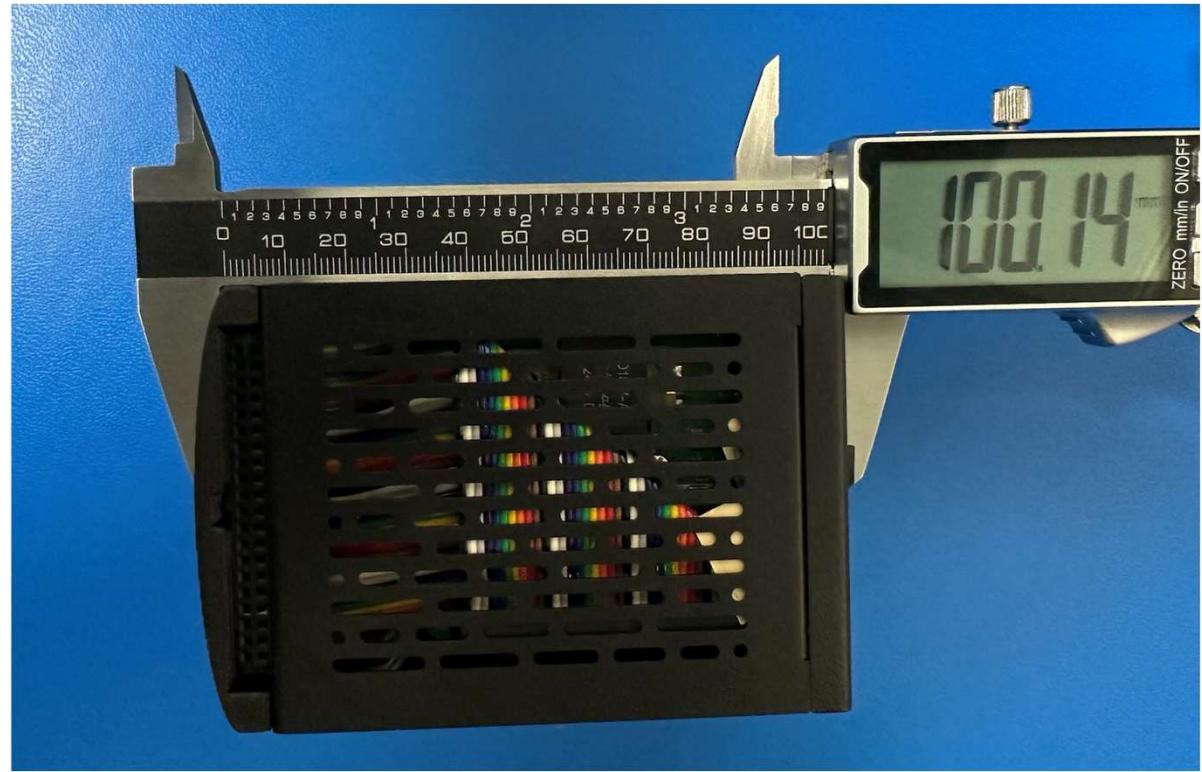
Modify Case for N4



Put together all the parts

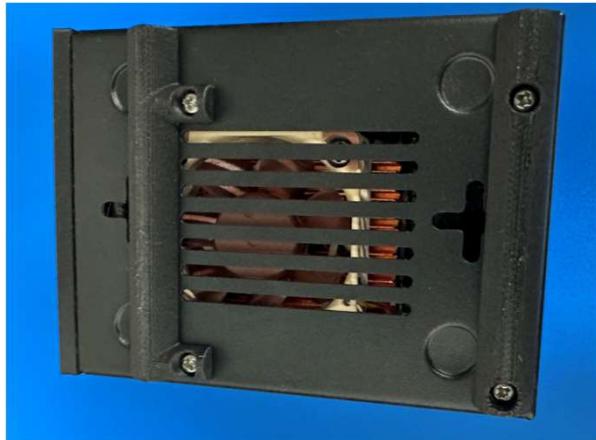


Close top and front case



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Performance Highlights

Intel N100 Processor (x86)

- Quad-core, power-efficient – ideal for edge computing and servers
- Fully compatible with Windows, Ubuntu, Radxa OS
- No ARM-related software limitations

Hailo AI Accelerator – 26 TOPS

- Real-time AI inference on-device
- Handles advanced computer vision and ML workloads

Power Over Ethernet (PoE)

- Single cable for power + data
- Enables clean, flexible installations

RP2040 Microcontroller (40-Pin Header)

- Rich I/O: I2C, SPI, UART, GPIO
- Perfect for custom sensors, low-level control, robotics



Cooling & Build

Noctua Fan + Heatsink Combo

- Silent and efficient, even under heavy AI tasks
- Reliable cooling for long-term performance
- **Ultra Compact Size**
 - 100mm × 69mm × 68mm
 - Fits edge enclosures and tight spaces
 - Mounting holes – supports vertical orientation



Developer-Friendly

- Runs full Linux environments
- GPIO & standard I/O expansion-ready
- Great for testing edge AI, robotics, automation, smart vision
- Schematics available