Raspberry Pi AI HAT+

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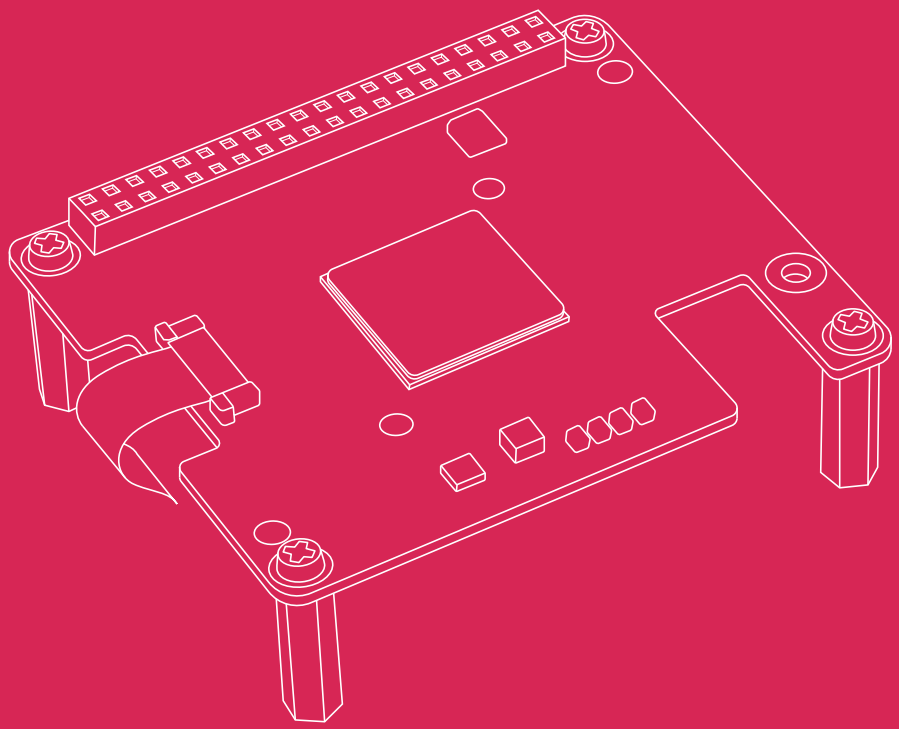

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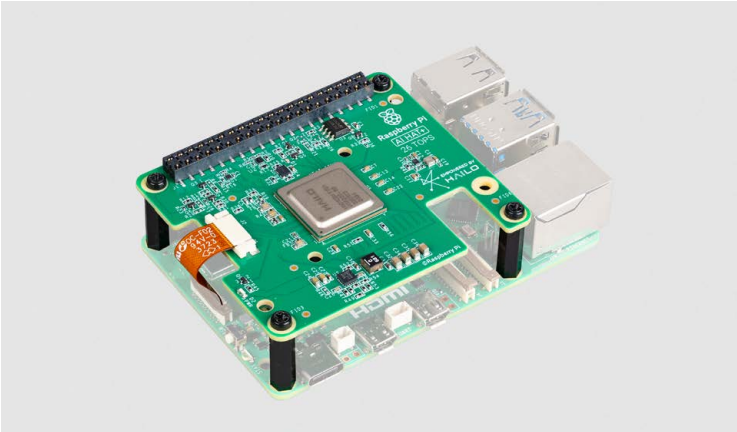
Overview



The Raspberry Pi AI HAT+ is an add-on board with a built-in Hailo AI accelerator for Raspberry Pi 5. It provides an accessible, cost-effective, and power-efficient way to integrate high-performance AI. Explore applications including process control, security, home automation, and robotics.

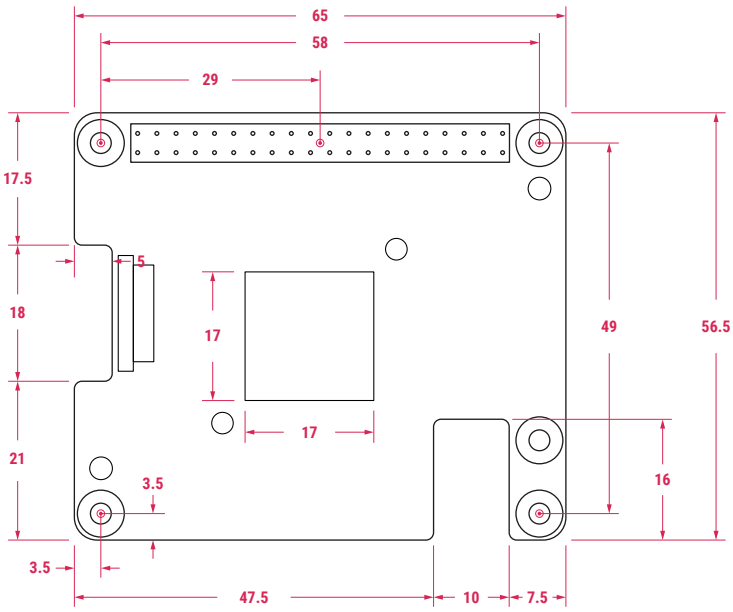
The AI HAT+ is available in 13 and 26 tera-operations per second (TOPS) variants, built around the Hailo-8L and Hailo-8 neural network inference accelerators. The 13 TOPS variant capably runs neural networks for applications including object detection, semantic and instance segmentation, pose estimation, and more. The 26 TOPS variant can handle larger networks, can run them more quickly, and can more effectively run multiple networks simultaneously.

The AI HAT+ communicates using Raspberry Pi 5's PCIe Gen 3 interface. When the host Raspberry Pi 5 is running an up-to-date Raspberry Pi OS image, it automatically detects the on-board Hailo accelerator and makes the NPU available for AI computing tasks. The built-in `rpicam-apps` camera applications in Raspberry Pi OS natively support the AI module, automatically using the NPU to run compatible post-processing tasks.

Specification

Features:	Hailo-8 or Hailo-8L accelerator offering 26 TOPS or 13 TOPS inferencing performance respectively Fully integrated into Raspberry Pi's camera software stack Conforms to Raspberry Pi HAT+ specification Supplied with 16mm stacking header, spacers, and screws to enable fitting on Raspberry Pi 5 with Raspberry Pi Active Cooler in place
Operating temperature:	0℃ to 50℃ (ambient)
Compliance:	For a full list of local and regional product approvals, please visit pip.raspberrypi.com

Physical specification



Note:

All dimensions in mm

All dimensions are approximate and for reference purposes only. The dimensions shown should not be used for producing production data

The dimensions are subject to part and manufacturing tolerances

Dimensions may be subject to change

WARNINGS

- The Raspberry Pi AI HAT+ shall only be connected to a Raspberry Pi via the PCIe interface and GPIO header.
- This product should be operated in a well-ventilated environment, and if used inside a case, the case should not be covered.
- Whilst in use, this product should be firmly secured, and should not be contacted by conductive items.
- All peripherals used with this product should comply with relevant standards for the country of use and be marked accordingly to ensure that safety and performance requirements are met.
- The cables and connectors of all peripherals used with this product must have adequate insulation so that relevant safety requirements are met.
- Operation of this device requires adult supervision.

SAFETY INSTRUCTIONS

To avoid malfunction or damage to this product, please observe the following:

- Do not expose to water or moisture, or place on a conductive surface whilst in operation.
- Do not expose to heat from any source; Raspberry Pi computers and the Raspberry Pi AI HAT+ are designed for reliable operation at normal ambient temperatures.
- Take care whilst handling to avoid mechanical or electrical damage to the printed circuit board and connectors.
- Whilst it is powered, avoid handling the printed circuit board, or only handle it by the corners to minimise the risk of electrostatic discharge damage.


Learning PyTorch [+]
Image and Video [+]
Audio [+]
Text [+]
Backends [+]
Reinforcement Learning [+]
Deploying PyTorch Models in Production [+]
Profiling PyTorch [+]
Code Transforms with FX [+]
Frontend APIs [+]
Extending PyTorch [+]
Model Optimization [+]
Parallel and Distributed Training [+]
Edge with ExecuTorch [+]
Recommendation Systems [+]
Multimodality [+]
4. [Optional] Pass data through your model to test
To ensure we receive our desired output, let's test our model by passing some random data through it.
Each number in this resulting tensor equates to the prediction of the label the random tensor is associated to.
Congratulations! You have successfully defined a neural network in PyTorch.
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AI HAT+
26 TOPS
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