Pi-AI Boost HAT 26T – High-Performance AI Accelerator for Edge Computing

Supercharge your Raspberry Pi 5 with the **Pi-AI Boost HAT 26T**, a high-performance AI accelerator designed to deliver powerful on-device inferencing and efficient edge computing. Equipped with the **Hailo-8 AI processor** offering an incredible **26 TOPS (Tera Operations Per Second)** of AI performance, this HAT enables your Raspberry Pi to run deep learning models and computer vision tasks faster and more efficiently than ever before.

Whether you're developing smart vision systems, robotics applications, or AI-powered IoT devices, the Pi-AI Boost HAT is built to bring **desktop-grade AI acceleration** to your compact Raspberry Pi setup.

Powerful Edge AI with Hailo-8 Accelerator

At the core of the Pi-AI Boost HAT lies the **Hailo-8 AI accelerator chip**, one of the most efficient and powerful AI processors available for edge devices. Capable of delivering **26 trillion operations per second (26 TOPS)**, the Hailo-8 allows you to run multiple neural network models concurrently with minimal latency and power consumption.
This hardware-level acceleration empowers your Raspberry Pi to handle **complex AI workloads** such as real-time object detection, facial recognition, image segmentation, and audio classification directly on the device — without relying on cloud computing.

PCIe Gen 3.0 Interface for Maximum Speed

The Pi-AI Boost HAT connects to the **Raspberry Pi 5 via PCIe Gen 3.0**, ensuring **ultra-fast data transfer rates** and efficient communication between the accelerator and the Raspberry Pi's CPU. This direct interface eliminates bottlenecks commonly found in USB-based AI accelerators and guarantees smooth, real-time inferencing performance even under heavy computational loads.

With this advanced connectivity, developers can expect **seamless AI integration**, faster model execution, and enhanced stability for demanding edge AI applications.

Seamless Compatibility with Popular ML Frameworks

The Pi-AI Boost HAT 26T is designed for flexibility and developer convenience. It integrates smoothly with leading **machine learning and deep learning frameworks**, including **TensorFlow, PyTorch, and ONNX**. This means you can easily deploy pre-trained neural networks or custom models to the device with minimal configuration.

Whether you're working on a Python-based AI prototype or building a commercial-grade embedded system, the Pi-AI Boost HAT ensures **compatibility and scalability** across a wide range of AI development tools and workflows.

AI-Powered Vision with rpicam-apps

When paired with the **Raspberry Pi Camera Module** or the **Raspberry Pi AI Vision Kit**, this accelerator works perfectly with **rpicam-apps** on Raspberry Pi OS. This integration enables **AI-assisted camera applications**, including intelligent image processing, object recognition, and visual analytics—all performed locally on the Raspberry Pi 5.

Developers can create **real-time smart camera systems** that detect, classify, and react instantly to their surroundings—ideal for robotics, automation, security, and smart city projects.

Supports Concurrent Neural Networks

One of the standout features of the **Pi-AI Boost HAT 26T** is its ability to run **multiple AI models simultaneously**. Thanks to the efficiency of the Hailo-8 architecture, users can execute concurrent neural networks for multitasking applications such as detecting different object types, performing facial recognition, and tracking movement—all at the same time.
This level of performance allows for **complex decision-making and adaptive behavior** in embedded AI systems.

Optimized for the Raspberry Pi 5

This HAT is fully compatible with the **Raspberry Pi 5**, utilizing the PCIe interface for maximum performance. It's designed to fit neatly on top of the board and comes with all necessary **mounting accessories**, including a **16mm stacking header, spacers, and screws**. It's also fully compatible with the **Raspberry Pi Active Cooler**, ensuring optimal thermal performance even during intensive AI workloads.

With plug-and-play setup and minimal configuration, developers can have a **complete AI acceleration platform** up and running in minutes.

Key Features

- **AI Accelerator:** Built-in Hailo-8 processor delivering up to 26 TOPS of AI performance

- **Interface:** PCIe Gen 3.0 connection for high-speed data transfer

- **Compatibility:** Works seamlessly with TensorFlow, PyTorch, ONNX, and other ML frameworks

- **Camera Integration:** Compatible with rpicam-apps for AI-based vision processing

- **Concurrency:** Supports multiple neural networks running simultaneously

- **Performance:** Real-time AI inferencing with ultra-low latency

- **Included Accessories:** 16mm stacking header, spacers, and screws

- **Cooling Support:** Mount-ready with Raspberry Pi Active Cooler

- **Supported Device:** Raspberry Pi 5

Ideal Applications

- **Edge AI Computing & IoT Gateways**

- **Smart Cameras & Vision Systems**

- **Robotics & Autonomous Vehicles**

- **Industrial Automation & Predictive Maintenance**

- **AI Research & Education**

- **Security & Surveillance Systems**

Why Choose the Pi-AI Boost HAT 26T

If you're serious about bringing AI to the edge, the **Pi-AI Boost HAT 26T** is the ultimate performance upgrade for your Raspberry Pi 5. With the combination of **Hailo-8's 26 TOPS AI**

power, **PCIe Gen 3.0 bandwidth**, and **broad framework compatibility**, it transforms your Raspberry Pi into a **powerful edge AI workstation**—capable of running real-time inference tasks once reserved for high-end PCs or cloud GPUs.

Compact, efficient, and fully optimized for modern AI workloads, this HAT is your gateway to next-generation **embedded artificial intelligence**.