



Edge AI Appliances

Accelerating AI-driven Edge Computing for Intelligent Video Analytics



Edge AI Appliances Solution Overview



TRANSPORTATION

- Simultaneous Localization and Mapping (SLAM)
- AMR/AGV
- Adaptive traffic control
- ADAS

Rugged Edge AI Appliances

Rugged edge AI appliances are designed for mission-critical applications in challenging conditions, such as retail video analytics, factory machine vision, and traffic monitoring.



MANUFACTURING

- MV Library & System SW
- MV Lighting
- Video Cards & CVS
- Data Ingestion & Analytics

Edge AI Starter Kits

The AI Starter Kits aim to deliver an all-in-one platform composed of AI-accelerated hardware and application-tailored software, designed to accelerate AI deployment at the industrial edge.



Integrated with AI hardware accelerators and pre-validated with AI solution partner, Lanner industrial-grade Edge AI platforms enable solutions with specific requirements for low-latency, high-throughput, and/or power efficiency in reliable and mission-critical applications. AI-accelerated Edge computing appliances, including AI inference servers, computers, acceleration modules and AI starter kit, can build the smart city infrastructures efficiently and economically.

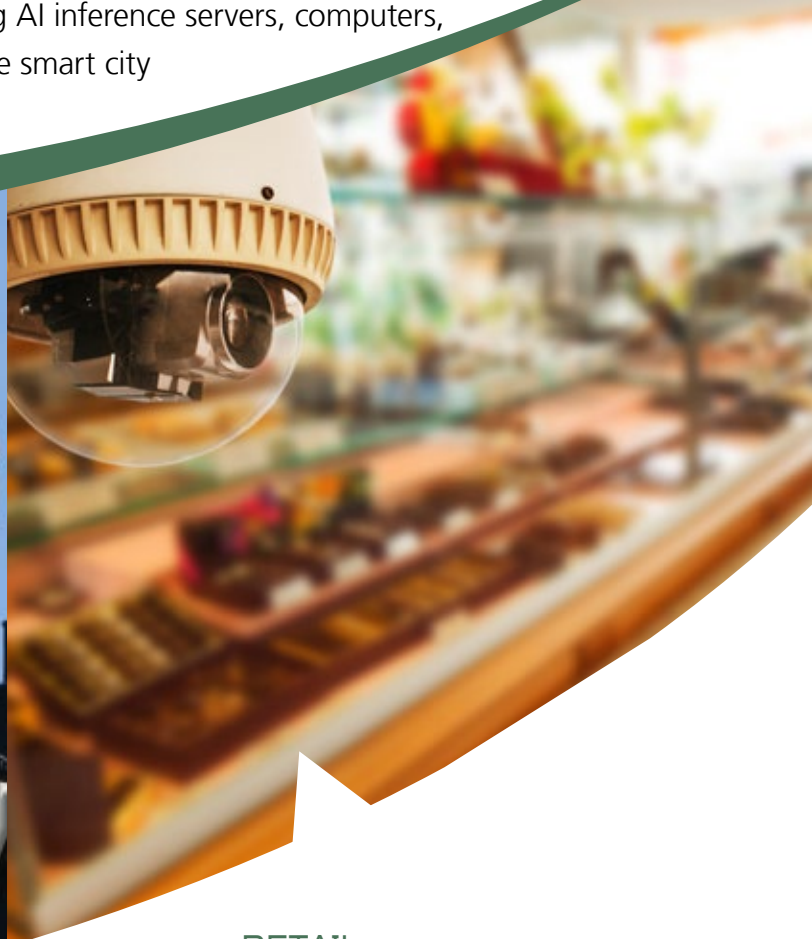


SMART CITY

- Smart Locks & access control
- Vehicle Tracking
- ALPR
- video content analysis

Edge AI Servers

Integrated with Intel Xeon CPUs, massive storage, and PCI-E expansion for GPU cards, these high-performance AI servers are designed for the most sophisticated parallel processing tasks.



RETAIL

- Markdown Optimization
- Customer Service Routing
- Promo prioritization
- Ad Targeting

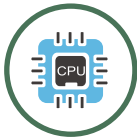
AI Acceleration Cards

The modular AI acceleration cards feature onboard Intel, Hailo, and NVIDIA GPUs to optimize high-volume video delivery and accelerate AI-based video data analytics at the edge.

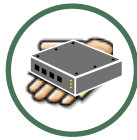


Rugged Edge AI Appliances

Lanner provides a full range of rugged edge AI appliances designed for mission-critical applications, such as video analytics, machine vision, and traffic monitoring. With a unique ruggedized design required for different industries, Lanner's deep learning inference AI platforms feature AI-optimized processing, wide operating temperature range, LTE/5G connectivity, and a rich I/O interface.



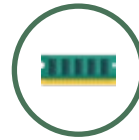
High-Performance Processor



Compact Design



Rich IO Connection



M.2 / PCIe Expansion



Wide Operating Temperature



AI Acceleration



Fanless Design



5G/LTE WiFi Ready

Rugged Edge AI Computer



11th Gen. Intel Core



11th Gen. Intel Core

Model Name	IloT-i530 NEW	IloT-i531 NEW
Processor System	11th Gen Intel® Core i7-1185GRE (Tiger Lake)	11th Gen Intel® Core i7-1185GRE (Tiger Lake)
AI Acceleration Support	N/A	N/A
Fanless	YES	YES
Memory	64GB	64GB
Storage	1x mSATA, 1x SATA	1x mSATA, 1x SATA
Ethernet	2x 2.5G RJ45, 6x RJ45 for PoE+	6x 2.5Gbps RJ45 (4x RJ45 For PoE+)
I/O	2x COM, 8xDI, 4xDO, 4x USB 3.0	4x COM, 4xDIO, 4x USB 3.0
Expansion	M.2: 1x B-Key for 5G, 1x E Key for WiFi-6 1x M-Key For PCIe Gen4	1x PCIe 3.0 x1 FHHL 1x B-Key w/ 2x Nano-SIM For 5G 1x E-Key 2230 For WiFi-6
Power	+24VDC	+24VDC
Mechanical	270 x 76 x 180 mm	270 x 76 x 220 mm
Environment	-40°C~55°C	-40°C~75°C
Driver Support	Windows 10 IoT, Linux	Windows 10 IoT Linux Dabian 11 Pre-install
Certification	CE/FCC, Class A	CE/FCC, Class A / UL

NVIDIA Jetson Edge AI Computer



NVIDIA Jetson NX



NVIDIA Jetson Orin



Model Name	EAI-i130	EAI-i131
Processor System	NVIDIA® Jetson Xavier NX/Jetson Nano	NVIDIA® Jetson Orin NX/Nano
AI Acceleration Support	NVIDIA Volta Architecture	NVIDIA Ampere Architecture
Fanless	YES	YES
Memory	16GB	16GB
Storage	1x M.2 2280 M Key, 16GB eMMC 5.1, SD Card	1x M.2 2280 M Key (PCIe x4)
Ethernet	2x RJ45 for PoE+	2x RJ45 for PoE+
I/O	2x COM, Audio, 2x USB 2.0 1x HDMI, 4x DIO	2x COM, Audio, 2x USB 2.0 1x HDMI, 4x DIO
Expansion	M.2: 1x B-Key for 5G, 1x EKey for WiFi-6	M.2: 1x B-Key for 5G, 1x EKey for WiFi-6
Power	+24VDC	+24VDC
Mechanical	201 x 65 x 196 mm	201 x 65 x 196 mm
Environment	-20C~75°C	-20C~75°C
Driver Support	Linux Open Source On NVIDIA SDK	Linux Open Source On NVIDIA SDK
Certification	CE/FCC Class A	CE/FCC Class A

Rugged Edge AI Computer



Industrial Edge AI



Vehicle Edge AI



Railway Edge AI



Model Name	EAI-i730	EAI-V330	EAI-R530
Processor System	12th Gen Intel® Core i9/i7 (Alder Lake S)	Intel® Atom® x6000 Series	13th Gen Intel® Intel Core i
AI Acceleration Support	2x PCIe X16 Full-length, 2x PCIe 4X Half-size	M.2 Hailo-8 AI Accelerator	1x Hailo-8™ AI Accelerator onboard
Fanless	YES	YES	YES
Memory	128GB	16GB	64GB
Storage	4x 2.5" SSD	eMMC 128GB (up to 128GB), SATA x1 (removable 2.5" storage bay)	2x SATA3 for 1x Removable Storage Caddy
Ethernet	2x 2.5GbE RJ45	2x 2.5GbE RJ45, 4x GbE PoE	4x 2.5GbE RJ45, 2x GbE PoE
I/O	2x COM, 8x USB 3.2, 4x DIO	4x USB, 2x COM, 1x CAN Bus 4xDI, 2xDO, HDMI, DVI	3x USB, 2x HDMI,
Expansion	1x M.2(NVMe) 2280 M-Key 2x SATA M.2 M-KEY 2242 2x PCIe*16, 2x PCIe*4	1x M.2 304(5)2 B Key socket 1x M.2 2230 E key socket 1x PGN Caddy for LTE/5G	2x M.2 2242/2280 M key (PCIe x4) socket, 1x M.2 2230 E key socket for WiFi, 4x PGN Caddy for LTE/5G
Power	100~230 Vac	DC 12/24/48V	DC 24-110V
Mechanical	374 x 250 x 419 mm	TBD	TBD
Environment	-25°C~65°C	-40°C~70°C	-40°C~70°C
Driver Support	Linux Kernel 5.x, Ubuntu Win 10	Linux Debian 10 pre-installed Win 10/11 IoT	Linux Debian 10 pre-installed Win 11 IoT
Certification	CE/FCC Class A, UKCA, UL, CB, RoHS	CE/FCC Class A, E13, MIL-STD-810G	CE/FCC Class A, E13, MIL-STD-810G, EN50155, EN45545-2

Edge AI Starter Kits

Lanner's Edge AI Starter Kits aim to deliver an all-in-one platform composed of AI-accelerated hardware and application-tailored software to accelerate time-to-market AI deployment at the industrial edge. This comprehensive kit is designed for various applications, including vision inspection, predictive maintenance, and operator monitoring.

NVIDIA

The NVIDIA-Certified Edge AI appliance ensures secure remote operation and accelerated workloads with the NVIDIA GPU. These Lanner Edge AI appliance has passed a rigorous testing process covering AI performance acceleration, security features, and management capabilities to validate optimal system configurations.



Intel

Intel® Edge Insights for Industrial is an open and modular product validated software that aggregates and processes time series, image/video data at the edge to provide useful insights via edge analytics. Powered by the Intel® Distribution of OpenVINO™ toolkit, EIS accelerates development, enabling quick integrations of pre-trained models (e.g., Tensorflow, Caffe, etc.) for object recognition, classification, and facial recognition in vision-based solutions.

Hailo

The Hailo-8™ AI processor, featuring up to 26 tera-operations per second (TOPS), significantly outperforms all other edge processors. Its area and power efficiency are leaps and bounds ahead of other leading solutions by a considerable order of magnitude, reaching up to 3 TOPS/W (tera-operations per second per watt).



Edge AI Starter Kit



NVIDIA A2



Falcon H8



Intel Movidius

Model Name	LEC-2290E	LEC-2290H NEW	LEC-2290 B NEW
Processor System	Intel® Core™ i7-9700TE (Codenamed Coffee Lake S)	Intel® Core™ i7-9700TE (Codenamed Coffee Lake S)	Intel® Core™ i7-8700/i7-9700TE (Codenamed Coffee Lake S)
AI Acceleration Support	NVIDIA A2	Falcon-H8	Intel® Movidius™ Myriad™ X
Fanless	N/A	N/A	N/A
Memory	32GB	32GB	32GB
Storage	2x Swappable SATA III Drive	2x Swappable SATA III Drive	2x Swappable SATA III Drive
Ethernet	2x RJ45, 4x PoE	2x RJ45, 4x PoE	2x RJ45, 4x PoE
I/O	6x COM, 8x DIO, 4x USB 3.0	6x COM, 8x DIO, 4x USB 3.0	6x COM, 8x DIO, 4x USB 3.0
Expansion	1x PCIe*16, 1x Mini-PCIe, 1x B Key M.2	1x PCIe*16, 1x Mini-PCIe, 1x B Key M.2	1x PCIe*16, 1x Mini-PCIe, 1x B Key M.2
Power	9~30 VDC	9~30 VDC	9~30 VDC
Mechanical	275 x 115 x 225 mm	275 x 115 x 225 mm	275 x 115 x 225 mm
Environment	0°C~40°C	-20°C~45°C	0°C~40°C
Driver Support	Windows 10 IoT, Linux	Windows 10 IoT, Linux	Windows 10 IoT, Linux
Certification	CE/FCC, Class A	CE/FCC, Class A	CE/FCC, Class A

Edge AI Starter Kit



Hailo-8 AI Accelerator

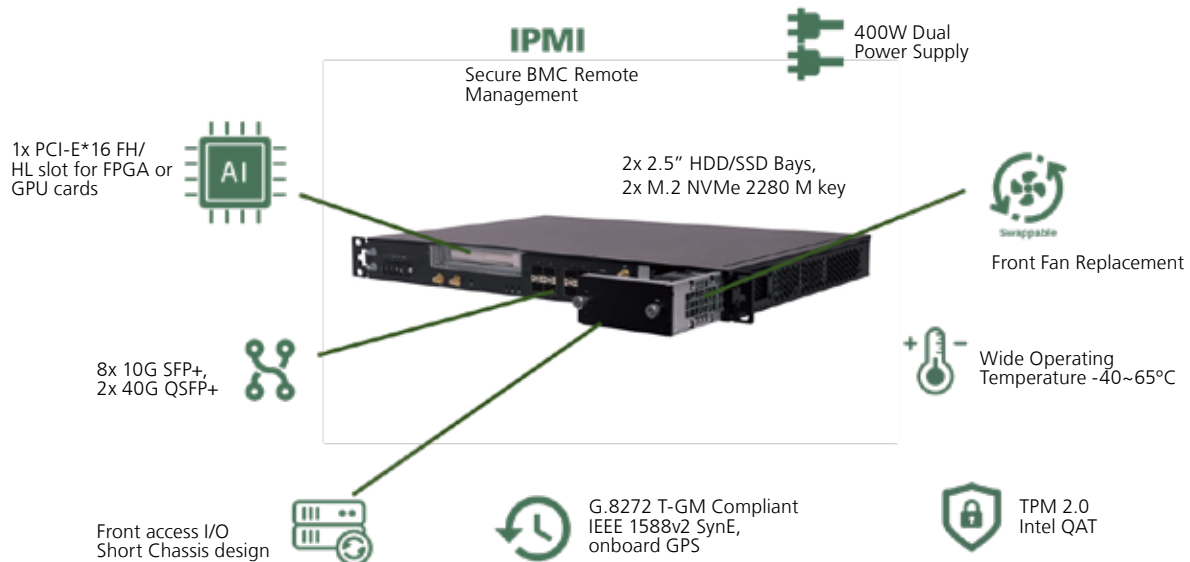


Hailo-8 AI Accelerator

Model Name	IIoT-I530H NEW	LEC-7242H
Processor System	11th Gen Intel® Core i7-1185GRE (Tiger Lake)	Intel Celeron N3350 (Apollo Lake)
AI Acceleration Support	M.2 Hailo-8 AI Accelerator	M.2 Hailo-8 AI Accelerator
Fanless	YES	YES
Memory	64GB	8GB
Storage	1x mSATA, 1x SATA, 1x M.2	Onboard 64GB eMMC 1x SATA (Design Reserved)
Ethernet	2x 2.5G RJ45, 6x RJ45 for PoE+	2x RJ45
I/O	2x COM, 8xDI, 4xDO, 4x USB 3.0	2x USB 3.0, 1x COM, 1x DP, 1x HDMI
Expansion	M.2: 1x B-Key for 5G, 1x E Key for WiFi-6 1x M-Key For PCIe Gen4	1x M.2 B+M Key, 1x Mini PCIe
Power	+24VDC	+12VDC
Mechanical	270 x 76 x 180 mm	168 x 40 x 145 mm
Environment	-40°C~55°C	-20C~70°C
Driver Support	Windows 10 IoT, Linux	Windows 10 IoT, Linux
Certification	CE/FCC Class A	CE/FCC, Class A, UL

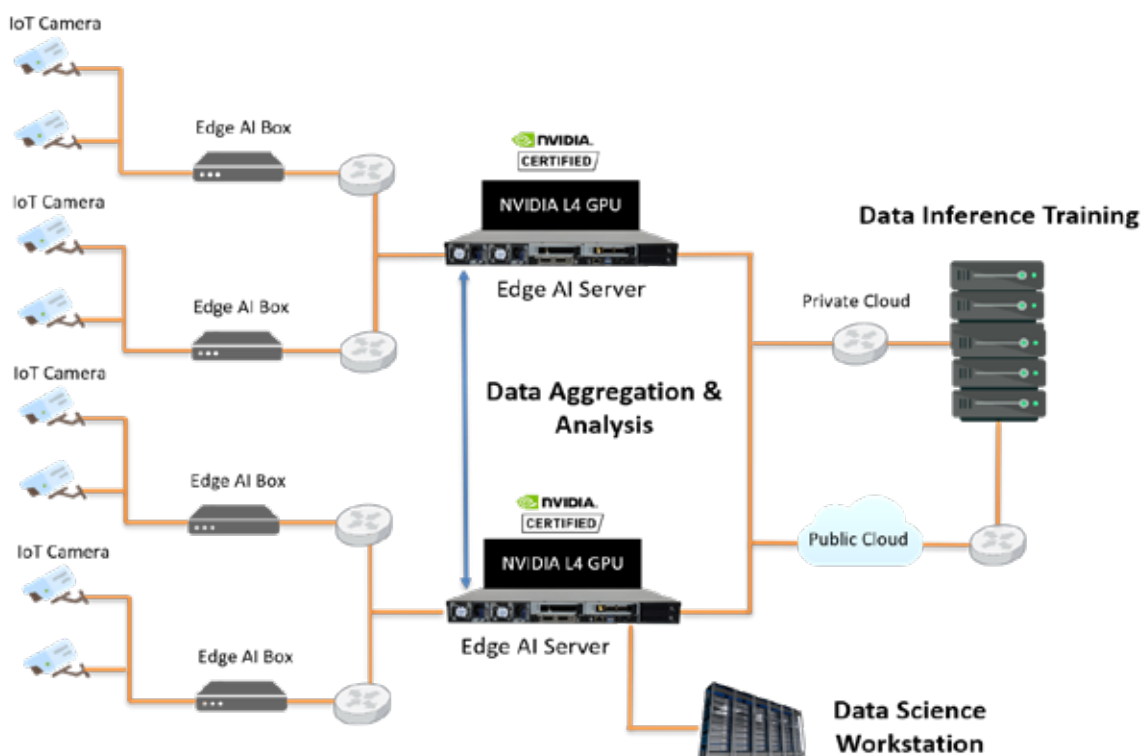
Edge AI Servers

Lanner offers server-grade Edge AI servers with multi-core processing, integrated BIOS security, AI acceleration, and scalability. These high-performance servers are integrated with Intel Xeon CPUs, massive storage, and PCI-E expansion for AI acceleration. They are designed to meet the parallel processing power required in the most sophisticated AI machine vision and deep learning applications. With their robust features, Lanner's Edge AI servers provide a reliable and powerful platform for handling complex AI workloads at the edge.



Protecting Critical Infrastructure Using Edge AI Platform

An Edge AI innovator in the U.S. approached Lanner, seeking to establish cooperation by using their AI-enhanced software to work seamlessly with Lanner's network edge servers.



1U Rackmount Edge AI Server



Intel Skylake D



Intel Skylake D



Intel Sapphire Rapids
SP/EE

Model Name	ECA-4025	ECA-4027 NEW	ECA-5540 NEW
Processor System	Intel Xeon® D-2100 Processor (Skylake-D)	Intel Xeon® D-2100 Processor (Skylake-D)	4th Gen Intel® Xeon® Scalable Processor (Sapphire Rapids-SP/EE)
AI Acceleration Support	Accelerator cards with PCIe16 HHHL, M.2 & mPCIe FF	Accelerator cards with PCIe16 HHHL, M.2 & mPCIe FF	Accelerator cards with PCIe16 HHHL, M.2 & mPCIe FF
Fanless	N/A	N/A	N/A
Memory	64GB	64GB	1024GB
Storage	2x 2.5" SATA, 2x M.2 NVMe	2x 2.5" SATA, 2x M.2 NVMe	2x 2.5" HDD/SSD 2x M.2 NVMe (PCIe) 2280 M key
Ethernet	1x RJ45 and 8 x 10G SFP+	8 x 10G SFP+, 2x40G QSFP+	1x 1GbE RJ45 for MGMT
I/O	1x USB 3.0	1x USB 3.0	2x USB 3.0
Expansion	1x PCI-E*16	1x PCI-E*16	1x FHFL (PCIex16, double width, 350W) 2x LP (PCIex8) or 1x FHHL (PCIex8), 1x OCP
Power	40~57 VDC	40~57 VDC	110 ~240V
Mechanical	438 x 300 x 44 mm	438 x 371 x 44 mm	438x580x44 mm
Environment	-40~65°C	-20°C~45°C	SKU A: 0-40°C SKU B: -5~50°C
Driver Support	Linux	Linux	Linux
Certification	CE/FCC, Class A	CE/FCC, Class A	CE/FCC, Class A

2U Rackmount Edge AI Server



Intel Cascade Lake SP



Intel Ice Lake SP



Intel Sapphire Rapids SP

Model Name	FX-3420	NCA-6520 NEW	NCA-6530 NEW
Processor System	Intel® Xeon® Processor Scalable Family (Cascade Lake-SP)	3rd Gen Intel® Xeon® Scalable Processor (Ice Lake-SP)	4th Gen Intel® Xeon® Scalable Processor (Sapphire Rapids-SP)
AI Acceleration Support	Accelerator cards with PCIe16 HHHL, M.2 & mPCIe FF	Accelerator cards with PCIe16 HHHL, M.2 & mPCIe FF	Accelerator cards with PCIe16 HHHL, M.2 & mPCIe FF
Fanless	N/A	N/A	N/A
Memory	768GB	1536GB	1536GB
Storage	SATA: 12x 3.5" HDD, 2x 2.5", 1x M.2-22110	2x 3.5" or 2.5" Internal Bays On-board: 3x M.2	SKU A & C: 2x 2.5" Swappable SKU B & D: 12x 2.5" Swappable On-board: 3x M.2
Ethernet	4x 10G SFP+, 6 x GbE RJ45	2x GbE RJ45	2 x GbE RJ45
I/O	2x USB 2.0, 2 x USB 3.0	2x USB 3.0	2 x USB 3.0
Expansion	2x PCI-E*16, 1x PCI-E*8	2x PCIe x16 FH/FL or 2x PCIe x16 FH/HL	2x PCIe x16 FH/FL or 2x PCIe x16 FH/HL
Power	100V~240 V	100~240V	100~240V
Mechanical	445 x 760 x 88 mm	588 x 997 x 250 mm	438 x 760 x 88 mm
Environment	0°C~40°C	0°C~40°C	0°C~40°C
Driver Support	Linux	Linux	Linux
Certification	CE/FCC, Class A	CE/FCC, Class A	CE/FCC, Class A

AI Acceleration Card



The most cost-efficient PCIe accelerator card on the market

Lanner's Falcon PCIe AI Acceleration Cards provide an easily deployable solution for engineers looking to offload CPU loading for low-latency deep learning inference. With high-density AI processors, the Falcon accommodates 1~6 Hailo-8™ AI processors, offering a modular Edge AI solution with high processing capabilities and power efficiency.

The Falcon AI Accelerator Cards enable legacy devices, such as NVRs, Edge AI boxes, Industrial PCs, and robots, to run video-intensive, mission-critical Edge AI applications through a standard PCIe interface. These applications include video analytics, traffic management, access control, and beyond.

Specifications

AI Performance

Up To 156 TOPs 8000 FPS Of ResNet-50, 1300 FPS Of YOLOv5m

AI Processors

1/2/4/5/6 Hailo-8™ AI Processors with Hailo Patented Structure Defined Dataflow Architecture

AI Frameworks Support

Hailo AI Dataflow Compiler With Profiler And Emulator Supports TensorFlow, ONNX And PyTorch Frameworks

PCIexpress Interface

PCI Express x16 Compliant With PCI Express Specification v3.0

System Compatibility

Intel x86 or ARM Devices, Linux OS e.g., Ubuntu, Yocto Lanner Network and Edge AI Appliances

Power Consumption

Typical: 35W

Temperature

Operating: 0~70°C (Commercial Grade)
-40~85°C (Industrial Grade)
Storage: -40~85°C

Humidity

5% - 90% RH, Non-condensing

Dimension

Standard PCIe Single Slot Form-factor
167.65mm x 111.15mm Without Bracket

Certifications

CE Class A, FCC Class A

Supported Devices

- NVRs & Edge AI Boxes
- Industrial Gateways & PCs
- Industrial Robots



Ordering Information

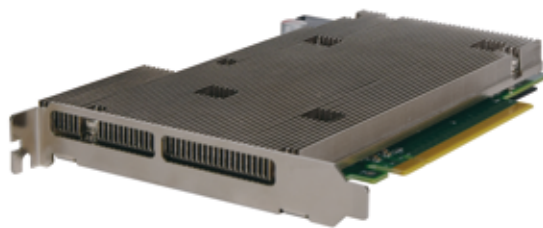
Falcon H8

Model No.	AI VPU	Remark
FALCON-H8A	6x Hailo-8™ AI Processor	Commercial-grade
FALCON-H8B	5x Hailo-8™ AI Processor	Commercial-grade
FALCON-H8C	4x Hailo-8™ AI Processor	Commercial-grade
FALCON-H8D	6x Hailo-8™ AI Processor	Industrial-grade
FALCON-H8E	5x Hailo-8™ AI Processor	Industrial-grade
FALCON-H8F	4x Hailo-8™ AI Processor	Industrial-grade

Falcon Lite

Model No.	AI VPU	Remark
Falcon H8L16A	2x Hailo-8™ AI Processor	Commercial-grade
Falcon H8L16D	4x Hailo-8™ AI Processor	Commercial-grade
Falcon H8L16E	2x Hailo-8™ AI Processor	Industrial-grade
Falcon H8L16H	4x Hailo-8™ AI Processor	Industrial-grade
Falcon H8L8A	2x Hailo-8™ AI Processor	Commercial-grade
Falcon H8L8D	4x Hailo-8™ AI Processor	Commercial-grade
Falcon H8L8EE	2x Hailo-8™ AI Processor	Industrial-grade
Falcon H8L8H	4x Hailo-8™ AI Processor	Industrial-grade
Falcon H8L4A	1x Hailo-8™ AI Processor	Commercial-grade
Falcon H8L4B	2x Hailo-8™ AI Processor	Commercial-grade
Falcon H8L4E	1x Hailo-8™ AI Processor	Industrial-grade
Falcon H8L4F	2x Hailo-8™ AI Processor	Industrial-grade

■ Feature Highlights



HAILO
Empowering Intelligence



High Processing Power
Up to 156 TOPS
8000FPS of ResNet-50



High Efficiency
Typical Power Consumption 35W



Cost-effective
Lowest TOPs/\$



Advanced AI Applications
Supports state-of-the-art
NN model in high resolution



Various DL Architectures
Hailo Model Zoo
Hailo TAPAAS AI Applications



Ease of HW & SW integration
Hailo AI Dataflow Compiler
Standard PCIe single slot form-factor

■ Hailo AI Software Suite

Lanner Falcon AI Acceleration Cards are accompanied by a comprehensive AI software suite that enables the compilation of deep learning models and the implementation of AI applications in production environments. The model build environment seamlessly integrates with common ML frameworks, allowing smooth and easy integration into existing development ecosystems. This software suite provides a powerful toolset for developers to efficiently utilize the AI capabilities of the Falcon AI Acceleration Cards in their projects.

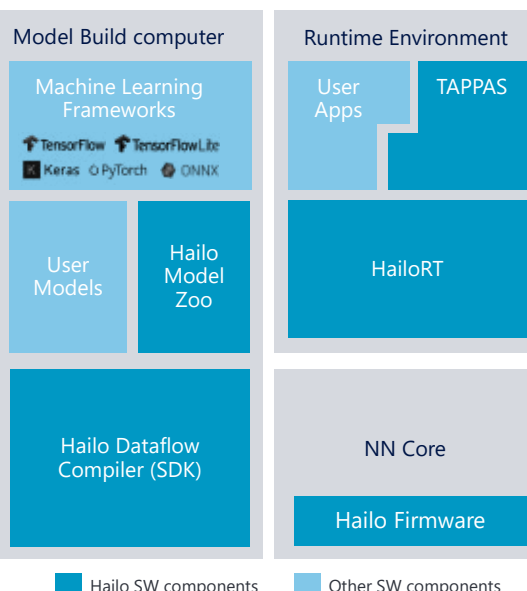
Comprehensive AI Software Suite

Build Environment

Seamless integration
with existing deep
learning frameworks

Large variety of ~100
state-of-the-art and
common free models

Maximizing AI
compute performance
by efficient utilization
of NN core resources



Runtime Environment

Application examples,
implementing pipeline
elements and **pre-trained**
AI tasks

An inference **run-time**
library with intuitive **API**
for optimized
performance
(C/C++/Python)

NN Core is part of
Vision Processor
or AI Accelerator

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Lanner

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