CamThink

www.camthink.ai

Accelerating Vision AI Innovations for Developers

CamThink Overview

CamThink provides vision AI cameras and edge AI devices that enable developers, engineers, and makers to quickly create custom, production-ready AI models for real-world applications across industries. By simplifying hardware customization and integration, CamThink streamlines the entire prototype-to-practice process. Combining expertise in hardware manufacturing with strong developer support, it ensures ease of use and faster time-to-market for developers working on vision AI projects. With a focus on open architecture and adaptability, CamThink empowers developers to build vision AI innovations in ways as diverse and dynamic as their ideas.

Mission

Accelerating Real-world AI Adoption with Edge Intelligence.

Vision

Be a Trustworthy Partner for AI Developers, Enabling Edge AI Across Industries.

Core Strengths

- Hardware Excellence
- Community Collaboration
- Continuous Innovation
- Edge AI Incubation

A Brand of Milesight

CamThink is a brand established by Milesight, dedicated to propelling the deep integration of edge AI based on open architecture hardware for AI developers. Founded in 2011, Milesight offers multi-potential sensing products to capture meaningful data. It innovatively applies AI, 5G, IoT to bring real impacts to diverse applications.

- **15%+** of revenue invested in R&D
- **50%+ R&D force among** 700+ employees
- More than **1 Million sensing devices** deployed in **120+** countries and regions
- **2000+** distributors and ecosystem partners worldwide
- **Global Operations:** 2 R&D Centers and 8 Branch offices

NeoEyes Series

Vision AI Camera

Modular and Efficient for Vision AI Developers

Designed for diverse vision AI applications, CamThink NE101 features triggered image capture with low power consumption. Its modular design supports replaceable lenses, communication modules (Wi-Fi HaLow & CAT1), optional housings, and versatile mounts, ensuring adaptability across environments and AI use cases.

NE101

Key Features

Build It Your Way

Modular design with interchangeable lenses, communication modules, and 3D-printable bracket files lets you customize with ease.

Designed for Developers

Open SDK, firmware, Wiki resources, and MQTT support provide a complete toolkit for rapid development.

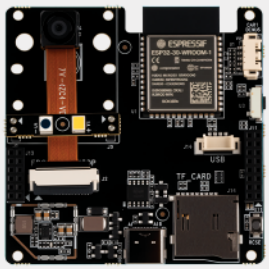
Sharper Vision, Smarter Integration

Triggered image capture with basic adjustable parameters, light management, and extensive internal I/O interfaces.

Built Tough, Built Flexible

IP67-rated durable housing meets a sleek, compact design, making it perfect for demanding environments.

CamThink NE101 takes developer support to the next level by including a Development Board, streamlining prototyping, testing, and customization for Vision AI applications.



- Type-C port supports DC 5V power input.
- UART, I2C, GPIO, and SPI ports simplify integration.
- Compact size 60 x 60 x 25 mm form factor for easy deployment.
- –20°C to 50°C wide operating range.
- Optional accessories, including antennas, lenses, and communication modules.

Application Scenarios

NeoEyes NE101

Model	NE101
MCU	ESP32-S3
RAM	8MB
Flash	16MB
Camera Sensor	OV5640 Module, selectable 120°/60° FOV and near/far focus options
Illumination	1 x LED
Button	1 x Snap Button
Communication	WiFi+Bluetooth, optional WiFi HaLow or Cat.1
Operating Temperature	-20°C to 50°C
Ambient Humidity	10% ~ 90% RH (non-condensing)
Power Supply	4 x AA Batteries
Ingress Protection	IP67
Dimension	77 x 77 x 48 mm
Mounting	Wall/Desk/Expandable Bracket

NeoEyes Dev Board

Model	NE101 Dev Board
MCU	ESP32-S3
RAM	8MB
Flash	16MB
UART	By Wafer 4Pins or Type-C
Storage	Micro-TF
Sensor	OV5640
WiFi	802.11b/g/n
Bluetooth	Bluetooth v4.2 BR/EDR, BLE
Communication	Optional WiFi HaLow or Cat.1 module
Alarm	1 x Alarm
Buttons	1 x Boot Button, 1 x Reset Button, 1 x Snap Button
Expansion IOs	Pinheader for UART, I2C, SPI, GPIOs
Illumination	1 x 3000K LED, 1 x Photodiode
Power Supply	DC 4-6V, by Wafer 2Pins or Type-C@5V
Operation Temperature	-20°C to 60°C
Storage Temperature	-40°C to 85°C
Certifications	CE/FCC/RoHS

NeoEyes Series

Edge AI Camera

Powerful and Flexible for Industrial Edge

Powered by the STM32N6 (Cortex-M55) processor with the Neural-ART™ NPU, the NE301 delivers real-time AI inference and professional-grade image processing with ultra-low power consumption.
With Arm® Helium™ vector processing, it combines robust industrial connectivity, flexible hardware interfaces, and an open-source ecosystem — offering a scalable, modular platform for edge AI vision applications.

NE301

Key Features

Edge AI Processing

STM32N6 (Cortex-M55) with the Neural-ART™ NPU, delivering 0.6 TOPS of computing power and 256MB RAM. Supports real-time visual and audio AI, including YOLO-based vision models.

Real-time Imaging Pipeline

Built-in ISP supports H.264 1080p@30fps encoding, JPEG compression, and MIPI-CSI2 / USB camera interfaces, enabling high-fidelity real-time imaging.

Modular & Connected

16-pin GPIO, UART, RS485, SPI, I²C, optional Cat.1 module, and flexible mounting options for versatile deployments.

Developer-First SDK

Open SDK supporting STM32Cube.AI, TensorFlow Lite, and ONNX (PyTorch/MATLAB) for fast, seamless AI deployment.

Rugged & Reliable

IP67-rated and –20°C to 50°C operating range for harsh industrial and outdoor use.

Highlights

Open-Source Ready, Industrial-Grade Performance

- **Instant On**
  ms Wake-up with real-time AI inference up to 25 fps
- **Ultra-Low Power**
  Independent STM32U073Kx power controller for efficiency
- **High Efficiency**
  3 TOPS/W NPU with optimized thermal design for performance
- **Plug & Play AI**
  Pre-trained STM32 models, supporting TensorFlow Lite, Keras, ONNX (PyTorch/MATLAB), and YOLO examples
- **Flexible Deployment**
  Operates via battery, USB-C, or PoE, adaptable to varied edge AI applications
- **Modular Expansion**
  16-pin GPIO, UART, RS485, SPI, and Wafer interfaces for easy integration

Application Scenarios

NeoEyes NE301

Model		NE301
MCU	Core	Cortex-M55 @ 800 MHz, Arm Helium (M-Profile Vector Extension)
	NPU	Neural-ART™ accelerator @1GHz, up to 0.6 TOPS AI inference
	SRAM	4.2 MB
	ISP	On-Chip ISP with demosaicing, AWB
	Video Codec	H.264 Hardware encoder, JPEG codec, supports 1080p@30fps
	NPU Efficiency	3 TOPS/W, fanless
	Boot / Wake Time	Microsecond boot, Millisecond wake-up
Mainboard	Power Ctrl Unit	The STM32U073Kx further reduces N6 power consumption through independent, refined power management.
	HyperFlash	128 MB
	PSRAM	64 MB
	Buttons (On-board)	1x Reset、1x Boot、1x Snapshot / Recording
	Indicators (On-board)	1x Power LED (PWR)、1x Status LED (STS)、1x Debug LED
	Communication	WiFi6 / Bluetooth 5.4
	Lens Module	1x 4-Pin USB、1x MIPI CSI-2
	I/O Interfaces	1x UART、1x RS485、1x I2C、2x GPIO、2x GND、1x 3.3V / 5V (controllable)
	Debug/Power	1x USB Type-C、1x 4-Pin UART
	Audio I/O	1x Audio-IN、1x Audio-OUT
	Communication Expansion	12-Pin + 16-Pin expansion IOs for communication modules
	Power Interface	4MP OS04C10 / USB Camera Module
Sensor	Camera Module	4MP OS04C10 Camera Module or USB Camera Module
	Sensor Expansion	Supports various sensors (PIR, radar, temperature/humidity) via motherboard I/O
Modular Expansion	Communication Module	Cat-1
	Power Module	1. POE support 2. RJ45 Ethernet with status LEDs 3. Solar power via Type-C 4. Alarm/GND/RS485/Wafer port 5. 16-Pin GPIO header
Power		5V DC-In
Operating Temperature		-20°C to 50°C
Ambient Humidity		0–95% RH (non-condensing)
Dimension		77 x 77 x 48 mm
Certification		CE / FCC / RoHS / SRRC

NeoEdge Series

Edge AI Box

Built with NVIDIA® AI Embedded System

Powered by NVIDIA® Jetson Orin™ NX/Nano module, CamThink NG4500 features a fanless chassis and high-performance hardware. It provides extensive I/Os and wireless connectivity for seamless integration into diverse applications. With NVIDIA® JetPack 6.0+ and 12V-36V DC-in support, it streamlines AI deployment of VLMs, LLMs, and deep learning models. Operating reliably from -25°C to 60°C, it delivers exceptional stability for next-gen AI applications.

NG4500

Key Features

Powerful AI at the Edge

Up to 157 TOPS AI performance, powered by the Jetson Orin™ Super Developer Kit with 12V-36V DC-in support.

Seamless Device Integration

Equipped with extensive industrial I/Os (RJ-45, RS-232/RS-485, DI/DO, CAN, USB 3.1, HDMI) to ensure seamless integration.

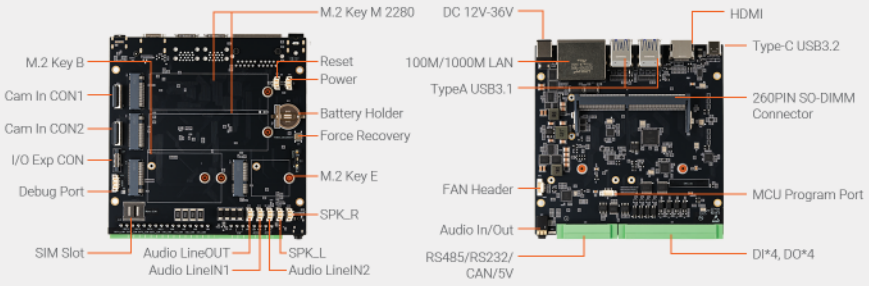
Next-Gen AI Ready

Built-in JetPack 6.0+ simplifies deployment of visual and language models (VLMs, LLMs) and advanced deep learning applications.

Built to Perform Anywhere

Fanless design with an operating range of -25°C to 60°C ensures durability in harsh environments without sacrificing performance.

CamThink NG4500 enhances edge AI development by providing a carrier board packed with versatile interfaces to simplify AI development and prototyping.



Compatible with Mainstream AI Platforms

Open AI · Gemma (Google) · Ollama
YOLO · Mistral AI · TensorFlow
Qwen-VL · Pytorch · Open CV
Llama · Speacht5 (Mictrosoft) · DeepSeek

Application Scenarios

NeoEdge NG4500

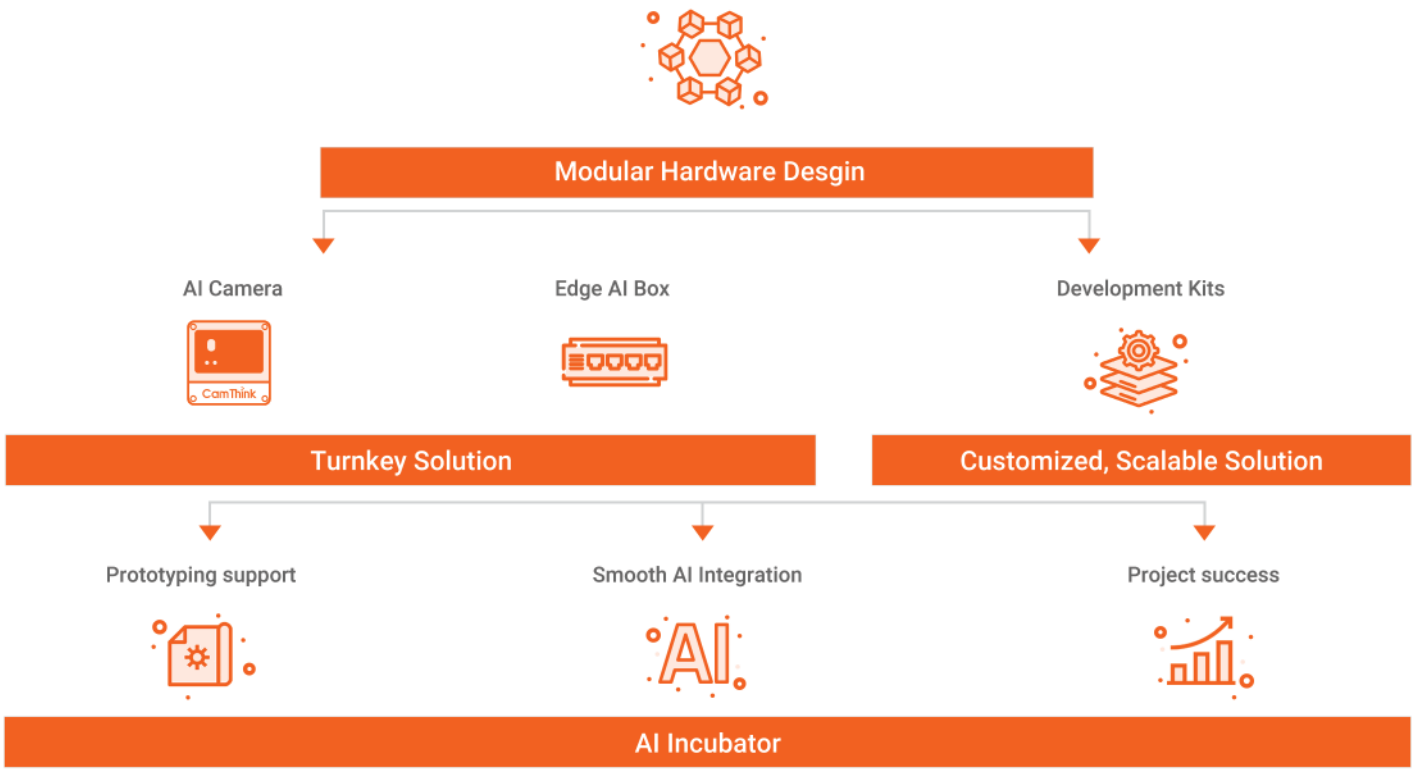
Model		NG4510	NG4511	NG4520	NG4521
System Core	Module	Jetson Orin™ Nano 4GB	Jetson Orin™ Nano 8GB	Jetson Orin™ NX 8GB	Jetson Orin™ NX 16GB
	AI Performance	20 TOPS	40 TOPS	70 TOPS	100 TOPS
	AI Performance (Update to SUPER)	34 TOPS	67 TOPS	117 TOPS	157 TOPS
	GPU	512 NVIDIA® CUDA® cores | 16 Tensor cores	1024 NVIDIA® CUDA® cores | 32 Tensor cores	1024 NVIDIA® CUDA® cores | 32 Tensor cores	
	CPU	6-core Arm® Cortex® A78AE (64-bit)		6-cores Arm® Cortex® A78AE v8.2 (64-bit)	8-cores Arm® Cortex® A78AE v8.2 (64-bit)
	DRAM SIZE	4GB	8GB	8GB	16GB
	DRAM BW	34 GB/s	68 GB/s	102 GB/s	102 GB/s
	OS	Ubuntu 22.04 (supports Jetpack 6.2 Super Developer Kit)			
Mechanical	Dimensions	160 x 125 x 75 mm			
	Installation	Desk/Wall mounting			
	Thermal	Fanless			

NeoEdge Carrier Board

Model		Carrier Board	
Storage		1 x M.2 Key M PCIe*4_Gen3 SSD 1 x M.2 Key M PCIe*1_Gen3 SSD	1 x M.2 Key M PCIe*4_Gen4 SSD 1 x M.2 Key M PCIe*1_Gen4 SSD
I/O	Ethernet	2 x RJ45 (1000Mbps Ethernet)	
	USB	4 x Type-A (USB3.1), 1 x Type-C (USB3.2)	
	Multifunctional Port	4 x DI, 4 x DO, 4 x GND_DI, 4 x GND_DO, 1 x CAN, 1 x RS232, 1 x RS485, 1 x DC 5V Power	
	HDMI	1 x HDMI	
	Audio	1 x Audio Jack	
Communication	M.2 Key B	M.2 Key B 2242/2252 Support 4G/5G/Wi-Fi Halow (Module Optional)	
	M.2 Key E	M.2 Key E 2230 Support Wi-Fi/Bluetooth	
Power	Power Supply	DC Input 12V-36V	
	RTC	1 x CR2032 RTC Battery	
Operating Temperature		-25°C to 70°C	
Dimensions		125 x 125 x 23 mm	
Certification		CE/FCC/RoHS	

Enriching Edge Intelligence across AIoT Industries

CamThink is committed to bridging the gap between AI applications and hardware engineering by building an open hardware and tool ecosystem, allowing AI developers to focus on using AI to solve real-world challenges without compromising on hardware complexity.



Industry-specific Applications

Warehouse Management

Safety Monitoring

Smart Metering

Smart Agriculture

Building Edge AI Applications with Developers

Resources Center:

Quick access to documents via Wiki, website, and provides sample code for project validation.

Hardware Expertise:

Professional expert consultation at the beginning stage.

Developer Community:

A thriving community on Discord and Github, encourages innovations and overcomes design challenges.

Project Booster:

PoC support and co-development opportunities.

Project Success:

Fast-response technical support and long-term product evolution.

Cultivating Customer's Project with Dedicated Service

Customer-oriented

We value each customer's request and offer seamless, responsive interactions. Unlike traditional vendors, we focus on each customer's success.

Strict Quality Control

We utilize the supply chain advantages in Milesight to deliver high-performance products compatible with ISO, CE, RoHS certifications.

Technical Support

We offer after-sale technical support with a dedicated field engineer. Our professional team will engage in product training, solving business needs to ensure your success.

Strong Partnership

Collaborate with ecosystem partners to streamline the integration, cultivate AI develoeprs with trustworthy support.

Thank you!

www.camthink.ai

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