

EDGE COMPUTING HUB



NEO-1

Introducing the ultra-compact system companion for all artificial intelligence (AI) applications in a low-power, high-speed portable device.

This computing hub will deliver a powerful 90 TOPS peak, meeting the demands of many fielded systems with limited lift-off capacity, power or endurance.

Install custom libraries and use the software API to rapidly load and run AI models. Over 20 leading-edge AI frameworks are supported. The processor also supports various RTOS, useful for any real-time navigation while applying AI-inference on sensor data, all in one device.

Execute multiple neural networks in parallel and process high-resolution multi-sensor data simultaneously with four high-speed USB connectors.

With dual Ethernet ports, the device can simultaneously be networked and connected to other NEO-1 hubs and computing systems.

Product applications



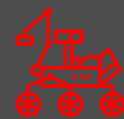
Autonomous
surface
vessels



Drones



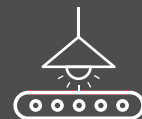
Autonomous
underwater
vehicles



Rovers



Visual
recognition &
tracking



Industrial
inspection
system



Signal
classification



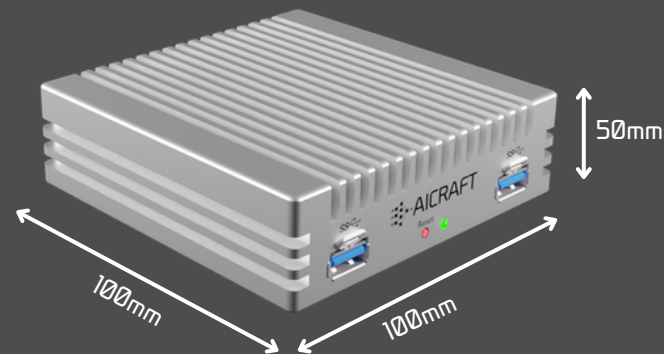
Smart
IoT



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Key benefits

- Advanced AI performance
- Ultra-compact size and lightweight
- Granular configuration for maximum power saving
- Usable with standard 5V mobile phone power bank
- Wide operating temperature
- Dual GbE and quad-USB for cameras and Lidar connectivity

Technical specifications

Computing performance

Processor	Multi-core ARMv8, 64-bit operations
ML co-processor	90 TOPS peak performance
RAM	4 GB DDR4 SDRAM with ECC (up to 8 GB)
Storage	64 GB eMMC with ECC (up to 512 GB)

Interfaces

USB	2x USB 3.0 Type-A, 2x USB 3.0 Type-C
Ethernet	2x 1 Gbps (options: 2.5 Gbps, 10 Gbps)
20-pin female GPIO header	1x RS-422, 1x UART, 1x I2C, 1x SPI, 4x GPIO, 1x 3.3V
Networking	Real-time clock with leap year adjustment

Software

Operating system	Custom Linux (Options: Yocto, ROS2, RTOS)
ML compiler	Supports common frameworks (e.g., Keras, Pytorch, Darknet)

Sensors

Vibrations	3-axis lateral and 3-axis longitudinal
Temperature	Device, processor, co-processor
Power monitors	Device (total power), processor, co-processor

Properties

Input voltage	5VDC
Power consumption	8W (nominal) up to 50W (maximum)
Mass	600g
Dimensions (L x W x H)	100mm x 100mm x 50mm (3.94" x 3.94" x 1.97")
Operating temperature	-20°C to +70°C (-4°F to +158°F)