

SIMPL-EP1 Industrial Edge AI Computer

Ultra-Compact. Extreme Performance. Wide Temperature Operation.

The Seyond SIMPL-EP1 packs up to 200 TOPS of NVIDIA® Jetson AGX Orin™ AI computing power into a compact 200 × 120 × 80 mm enclosure built for the world's toughest environments. From -40 °C arctic cold to +75 °C desert heat, it supports up to 40 W power mode at 75 °C ambient temperature — backed by automotive-grade ruggedization, advanced thermal management, and certifications including NEMA TS2 and IP52. Perfect for V2X, intelligent traffic systems, security, and industrial AI, the SIMPL-EP1 is the go-anywhere, deploy-anywhere edge computing solution.



NEMA TS2, RoHS, REACH

Main Features

- Compact, Powerful — 200 × 120 × 80 mm, up to 200 TOPS AI compute.
- Extreme Temps — Operates from -40 °C to +75 °C with cold-start heater.
- Thermal Stability — Full performance at +75 °C without throttling.
- Rugged Build — IP52, NEMA TS2, shock & vibration certified.
- Flexible Mounting — DIN-rail, desktop, or pole-mount ready.

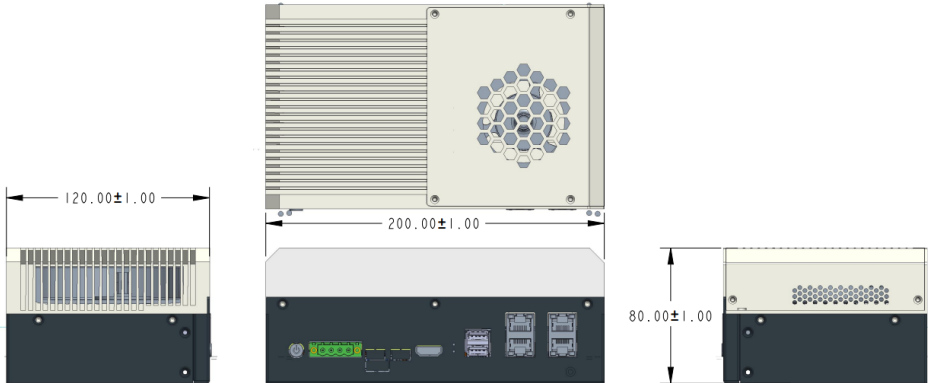
Specifications

General Parameters		
Processor	NVIDIA Jetson Series	AGX Orin 32G
	CPU ¹	8-core NVIDIA Arm® Cortex A78AE v8.2 64-bit CPU, 2MB L2 + 4MB L3
	GPU ²	NVIDIA Ampere architecture with 1792 NVIDIA® CUDA® cores and 56 Tensor Cores
	AI Performance Reference ³	Up to 200 TOPs
	Memory ⁴	32GB 256-bit LPDDR5 DRAM
Interface ¹³	Ethernet	* 4x RJ45, 1000Base-T
	Display	1x HDMI 2.0
	USB	2x USB 3.0
	Power Switch	1x Power ON/OFF Button
	Reserved ports	1x External Fan
	Reserved ports	2x Micro USB
	Expansion ports	GPIO/I2C/RS232/RS485
Power	Input Voltage	9 ~ 32 V DC
	Rated Voltage	24 V DC
	Protection	Grounding equipment Surge protection ESD (Electrostatic Discharge) protection
Environment	Operating Temperature ⁸	-40~ + 75°C
	Storage Temperature	-45~ + 85°C
	Vibration	NEMA TS2 ¹⁰
	Shock ⁹	IEC EN 60068
	Operating Humidity	10~95%@40°C, Non condensing
Mechanical	Shell	Metal
	Dimensions (H × W × D)	200x 120x 80mm
	Heat dissipation	Fan

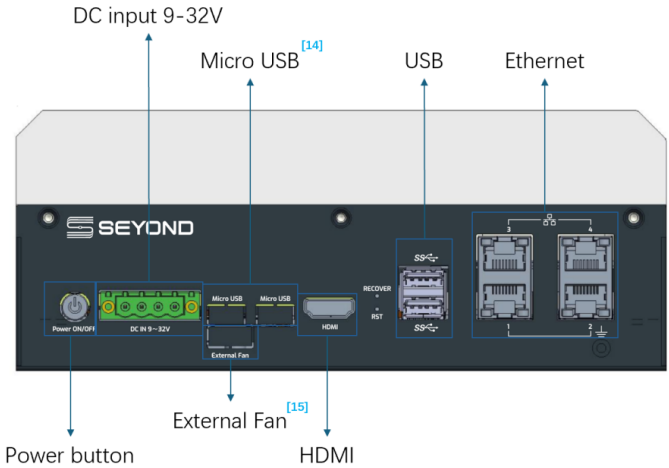
	Installation ¹¹	Desktop / DIN-rail
	Installation Position	Inside the pole-mounted box/signal control box
	Weight	2.5kg
	Ingress Protection	IP52
	Low temperature heating	100W heating film
Certificates ¹²	NEMA TS2/CE/FCC/RoHS/REACH	/
Operation System	Linux	Hardware-level exception detection and recovery mechanism Hardware fault diagnosis and alarm A/B dual system partitions with automatic failover ¹³ Unattended USB drive upgrade ¹⁴ Cyber security features
Storage	SSD	512G

* Only one IP address is available for the four ethernet ports, the hardware does not support configuring a separate IP address for each port.

Dimensions (Unit: mm)



Front View



Packing List

ITEM	QTY
SIMPL-EP1	1 pcs
Power Adaptor	1 pcs
DC power connector	1 set
Bracket	2 set
Screw nuts	2 set
DC Cable	1 pcs

*Specifications are subject to change without notice and based on engineering targets. Specs are not guaranteed to have passed full validation at the time of publication.

[1] 8 physical cores | ARM architecture | 64-bit | Max frequency 2.2GHz (measured 2.188GHz) | L2 2MB+L3 4MB efficient cache | Designed for automotive electronics/industrial applications.

[2] Ampere architecture | Max frequency 930MHz | 1792 CUDA cores | 56 Tensor cores, suitable for real-time autonomous driving perception | Sparse INT8 performance 108 +92 TOPS | GPU dense INT8 performance 54 TOPS | GPU dense FP16 performance 27 TFP16 | DLA dense INT8 performance 46 TOPS (2 cores, 23 TOPS each).

- [3] Performance under boundary conditions: 40W power, 75°C still-air temperature chamber, stable continuous operation for 75 days | GPU TensorCore performing GEMM operations, CPU intensive computing using 6 cores, iperf testing Ethernet ports, USB connected drive read/write at full speed, SSD read/write at full speed, eMMC read/write at full speed.
- [4] 32GB 256-bit LPDDR5 | 64GB eMMC | 204.8GB/s memory high bandwidth.
- [5] 4x Gigabit Ethernet ports, RJ45 interface type, does not support PoE | Cat6 cable max transmission distance 100m | Max bandwidth 1 Gbps | Full-duplex communication | 1x 10GbE port converted via internal switch to 4x Gigabit Ethernet ports.
- [6] 1x HDMI 2.0 display interface | Max bandwidth 18 Gbps | Max resolution 4K@60Hz | Supports office/design 4K/PC displays | Premium high Speed cable, max length 3m.
- [7] 2x USB 3.0 interfaces | Max bandwidth 5Gbps, actual transfer rate approx. 400-500 MB/s | Full-duplex communication | Compatible with USB 2.0 devices | Max cable length 3m.
- [8] Product can operate in 40~+75°C environment | Low-temperature heating function with strict heating logic | High-temperature heat dissipation function, low-power cooling logic ensures optimal system performance.
- [9] Shock test conditions: 10g, 18ms/impact, 3 times per direction. Contact Seyond staff for test report.
- [10] Passed NEMA TS2 test, test report 12865-0. Contact Seyond staff for test report.
- [11] Standard DIN rail mounting | 35mm standard rail | Contact Seyond staff for installation manual.
- [12] Product complies with CE/FCC/RoHS/REACH certifications.
- [13] Expandable interfaces: RS232/RS485 | Interfaces reserved internally | Not available by default | Need to modify the front panel and customize the connector for expansion.
- [14] Reserved Micro USB interface | Internally for SOM upgrade | Used for Debug, MCU upgrade | Need to destroy the front panel for use | The front panel cannot be repaired after being destroyed.
- [15] Reserved External FAN interface | Connecting external fan for system heat dissipation | Can be controlled via MCU | Not available by default | Contact Seyond staff for activating the function.
- [16] A/B partition is an optional configuration | Can be configured as single partition | Can be configured as dual partition.
- [17] Dual partition supports unattended USB drive upgrade | Single partition does not support unattended USB drive upgrade.



Innovative Traffic Solutions
www.its-traffic.com
+1 877-880-5872
sales@its-traffic.com