

AIB-NIAO-S

Highly Integrated AI Server, Provide 275 TOPS and Expandability



Product Features

- Powered by NVIDIA® Jetson AGX Orin™ up to 275 TOPS
- 3×M.2 M Key / 1×M.2 E Key / 1×M.2 B Key
- 2×USB3.2 Gen2
- 2×PCIe Gen3×4
- Fanless Design
- CAN Bus / UART / I2C / SPI

Specification

System Information

System Memory	NVIDIA Jetson AGX Orin™ 32GB 32GB LPDDR5/ NVIDIA Jetson AGX Orin™ 64GB 64GB LPDDR5
Processor	NVIDIA Jetson AGX Orin™ 32GB 8-core Arm® Cortex®-A78AE v8.2 64-Bit CPU 2MB L2 + 4MB L3/ NVIDIA Jetson AGX Orin™ 64GB 12-Core Arm® Cortex®-A78AE v8.2 64-Bit CPU 3MB L2 + 6MB L3
GPU	NVIDIA Jetson AGX Orin™ 32GB 1792-Core NVIDIA Ampere Architecture GPU with 56 Tensor Cores/ NVIDIA Jetson AGX Orin™ 64GB 2048-Core NVIDIA Ampere Architecture GPU with 64 Tensor Cores

AI Performance

AI Performance	NVIDIA Jetson AGX Orin™ 32GB 200 TOPS/ NVIDIA Jetson AGX Orin™ 64GB 275 TOPS
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Expansion

PCIe	1×PCIe Gen3×4 Slot 1×PCIe Gen3×4 Slot
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M.2	1×M.2 2230 E Key PCIe Gen4*1/USB2.0/SDIO Slot 1×M.2 2280 M Key PCIe Gen4×4 Slot 1×M.2 2280 M Key PCIe Gen4×4 Slot(*) 1×M.2 3080 M Key PCIe Gen4×4 Slot(**) 1×M.2 3042 B Key USB3.2 Gen2 (10G) Slot
	* Please select either 1×PCIe Gen3×4 Slot or 1×M.2 2280 M Key PCIe Gen4×4 Slot to use
	** Please select either 1×PCIe Gen3×4 Slot or 1×M.2 3080 M Key PCIe Gen4×4 Slot to use

Storage

Storage	64GB eMMC 5.1 (On NVIDIA Jetson AGX Orin™ Module)
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Development Environment

OS	Ubuntu: 20.04
Kernal	5.10.104-tegra or Higher
BSP	Linux for Tegra(L4T) R35.1 or Higher
SDK	JetPack 5.0.2 or Higher

External I/O connector

USB	2×USB3.2 Gen2 (Type-A) 2×USB3.2 Gen1 (Pin Header) 2×USB2.0 (Type-A)
Network	2×RJ45 for 10/100/1000Mbps Ethernet DHCP Client
Display	2×HDMI2.0 1×DP *Select 2 Video Output Port at Same Time
MIPI	16×MIPI CSI-2 Lanes (D-PHY 2.1, 4×4 3×4+2×2 2×4+4×2 1×4+5×2 6×2 MIPI Lanes, Support MIPI Camera, Capture Card)
Peripheral Communication	1×UART (Pin Header) 3×GPIO (Pin Header) 2×CAN Bus (Pin Header) 2×I2C (Pin Header) 1×I2S (Pin Header) 1×SPI (Pin Header) 3×PWM (Pin Header)
Misc. Features	Firmware Upgradable AutoPower (Pin Header)

Video Encode

NVIDIA Jetson AGX Orin™ 32GB
 AV1 (Main Profile)
 . 1×8K30 | 2×4K60 | 4×4K30 | 7×1080p60 | 15×1080p30
 H.265 (Main, Main10)
 . 1×8K30 | 2×4K60 | 4×4K30 | 9×1080p60 | 18×1080p30
 H.264 (Baseline, Main, High)
 . 1×4K60 | 2×4K30 | 5×1080p60 | 11×1080p30
 VP9 (Profile 0, Profile 2)
 . 1×4K60 | 3×4K30 | 7×1080p60 | 15×1080p30
 NVIDIA Jetson AGX Orin™ 64GB
 AV1 (Main Profile)
 . 1×8K30 | 3×4K60 | 6×4K30 | 9×1080p60 | 18×1080p30
 H.265 (Main, Main10)
 . 1×8K30 | 3×4K60 | 7×4K30 | 11×1080p60 | 22×1080p30
 H.264 (Baseline, Main, High)
 . 1×4K60 | 3×4K30 | 6×1080p60 | 13×1080p30
 VP9 (Profile 0, Profile 2)
 . 1×8K30 | 3×4K60 | 6×4K30 | 9×1080p60 | 18×1080p30

Video Decode

NVIDIA Jetson AGX Orin™ 32GB
 AV1 (UHP)
 . 1×4K60 | 3×4K30 | 6×1080p60 | 12×1080p30
 H.265 (UHP)
 . 1×4K60 | 3×4K30 | 6×1080p60 | 12×1080p30
 H.264 (UHP)
 . 1×4K60 | 2×4K30 | 5×1080p60 | 11×1080p30
 NVIDIA Jetson AGX Orin™ 64GB
 AV1 (UHP)
 . 2×4K60 | 4×4K30 | 8×1080p60 | 16×1080p30
 H.265 (UHP)
 . 2×4K60 | 4×4K30 | 8×1080p60 | 16×1080p30
 H.264 (UHP)
 . 1×4K60 | 3×4K30 | 7×1080p60 | 14×1080p30

Capture Card (Optional)
PCIe Model

4×HDMI2.0
 4×12G-SDI
 16×TVI / AHD
 8×GMSL2
 4×HDMI
 4×6G-SDI

M.2 Model

1×HDMI2.0
 1×12G-SDI
 1×DVI-I
 1×YPbPr
 1×VGA

Mechanical & Environmental
Power Requirement

DC 19V

Operating Temp.

Standard Version: 0~60。 C with Airflow

Storage Temp.

-20~80。 C

Optional Product Features Extension by Daughter Board
SDK / Software

By request

AGX 5G

5G Mobility Network (Supports 5G / 4G / 3G SIM Module)

AGX PSE

**IP Camera
8×RJ45 for 10 / 100 / 1000Mbps Ethernet with IEEE802.3af Compliant
*PSE Power Supply
8×15W (IEEE802.3af)"

Assured Systems

Assured Systems is a leading technology company with over 1,500 regular clients in 80 countries, deploying over 85,000 systems to a diverse customer base in 12 years of business. We offer high-quality and innovative rugged computing, display, networking and data collection solutions to the embedded, industrial, and digital-out-of-home market sectors.

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