

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)

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 12~20V

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)"
