

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
Expansion	
PCIe	1×PCIe Gen3×4 Slot 1×PCIe Gen3×4 Slot

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 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)"
