

# 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

<b>System Memory</b>	NVIDIA Jetson AGX Orin™ 32GB 32GB LPDDR5/ NVIDIA Jetson AGX Orin™ 64GB 64GB LPDDR5
<b>Processor</b>	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
<b>GPU</b>	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

<b>AI Performance</b>	NVIDIA Jetson AGX Orin™ 32GB 200 TOPS/ NVIDIA Jetson AGX Orin™ 64GB 275 TOPS
-----------------------	---

### Expansion

<b>PCIe</b>	1×PCIe Gen3×4 Slot 1×PCIe Gen3×4 Slot
-------------	--

<b>M.2</b>	<p>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</p> <p>* 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</p>
------------	--

**Storage**

<b>Storage</b>	64GB eMMC 5.1 ( On NVIDIA Jetson AGX Orin™ Module)
----------------	--

**Development Environment**

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

**External I/O connector**

<b>USB</b>	<p>2×USB3.2 Gen2 ( Type-A )          2×USB3.2 Gen1 ( Pin Header )          2×USB2.0 ( Type-A )</p>
<b>Network</b>	<p>2×RJ45 for 10/100/1000Mbps Ethernet          DHCP Client</p>
<b>Display</b>	<p>2×HDMI2.0          1×DP          *Select 2 Video Output Port at Same Time</p>
<b>MIPI</b>	<p>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 )</p>
<b>Peripheral Communication</b>	<p>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 )</p>
<b>Misc. Features</b>	<p>Firmware Upgradable          AutoPower ( Pin Header )</p>

<b>Video Encode</b>	<p>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</p> <p>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</p>
---------------------	---

<b>Video Decode</b>	<p>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</p> <p>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</p>
---------------------	---

**Capture Card ( Optional )**

<b>PCIe Model</b>	<p>4×HDMI2.0          4×12G-SDI          16×TVI / AHD          8×GMSL2          4×HDMI          4×6G-SDI</p>
-------------------	--

<b>M.2 Model</b>	<p>1×HDMI2.0          1×12G-SDI          1×DVI-I          1×YPbPr          1×VGA</p>
------------------	--

**Mechanical & Environmental**

<b>Power Requirement</b>	DC 19V
<b>Operating Temp.</b>	Standard Version: 0~60。 C with Airflow
<b>Storage Temp.</b>	-20~80。 C

**Optional Product Features Extension by Daughter Board**

<b>SDK / Software</b>	By request
<b>AGX 5G</b>	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.

### US

[sales@assured-systems.com](mailto:sales@assured-systems.com)

Sales: +1 347 719 4508  
Support: +1 347 719 4508

1309 Coffeen Ave  
Ste 1200  
Sheridan  
WY 82801  
USA

### EMEA

[sales@assured-systems.com](mailto:sales@assured-systems.com)

Sales: +44 (0)1785 879 050  
Support: +44 (0)1785 879 050

Unit A5 Douglas Park  
Stone Business Park  
Stone  
ST15 0YJ  
United Kingdom

VAT Number: 120 9546 28  
Business Registration Number: 07699660