

AIR-021

AI Inference System Based on NVIDIA® Jetson Orin™ NX/ Orin Nano™



Features

- Compact and high performance AI box up to 157 TOPS AI computing
- NVIDIA® Jetson Orin™ NX 16GB/8GB and Orin Nano™ 8GB Modules
- 12-24V wide power and -20-50 °C (NX) -10-50°C (NANO) supported
- Multiple IO ports: LAN, DIO, COM, CANBus, USB 3.2
- Versatile expansions with M.2 B/E/M key/SD card support
- Support Linux Ubuntu OS 22.04 and JetPack 6.2 SDK
- Support Edge AI SDK / Inference Kit: Designed for performance-optimized, multi-model edge AI applications.



Specifications

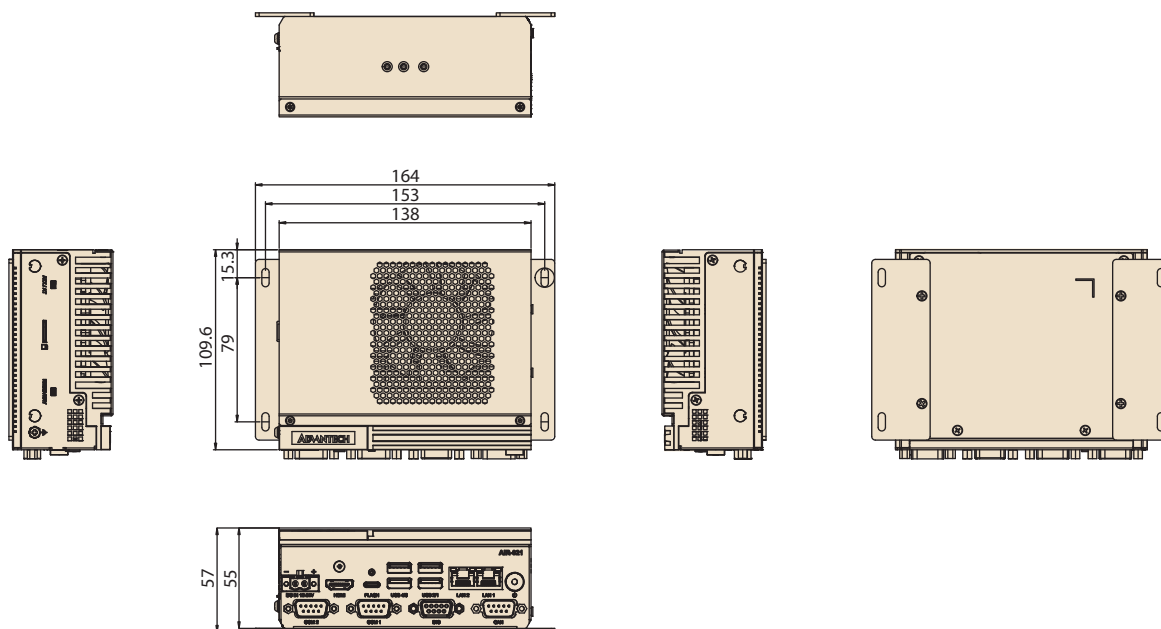
Model		AIR-0210-S0A1U	AIR-0210-B0A1U*	AIR-021R-S7A1U
Platform		Orin™ NX 16GB	Orin™ NX 8GB	Orin Nano™ 8GB
Processor System	CPU	8-Core ARM® Cortex®-A78AE v8.2	6-Core ARM® Cortex®-A78AE v8.2	6-Core ARM® Cortex®-A78AE v8.2
	GPU	1024-core NVIDIA Ampere architecture GPU with 32 Tensor Cores		
	AI Performance Reference	157 TOPS (Super Mode)	117 TOPS (Super Mode)	67 TOPS (Super Mode)
	Memory	16GB 128-bit LPDDR5	8GB 128-bit LPDDR5	8GB 128-bit LPDDR5
Ethernet	Interface	RJ-45		
	Controller	Realtek 8111 & Intel® i226		
	Speed	LAN1 1GbE / LAN2 2.5GbE		
Display	HDMI	1 x HDMI 2.1 TMDS (Max. resolution 3840 x 2160 @ 60Hz for NX, 30Hz for NANO)		
IO Ports	USB	4 x USB 3.2 Gen2 Type A 1 x USB Type C (Only recovery mode)		
	CANBus	1 x DB9 (1 Mbps)		
	GPIO	1 x 8 bit		
	COM	2 x RS232/422/485, 4wire		
	Switch	AT/ATX mode and recovery mode switch		
TPM		IC NPCT764AAEYX TPM2.0		
Expansion	M.2 B Key	1 x M.2 3052 (USB3.2 Gen2 x1) for 5G module with Nano SIM holder		
	M.2 E Key	1 x M.2 2230 (PCIe Gen3 x1/USB2.0) for WIFI/BT		
	Micro SD	1 x (USB 2.0, not support boot up by MicroSD)		
Storage	M.2 M Key	1 x M.2 2280 (PCIe Gen4 x4), 1x M.2 2242 (PCIe Gen4 x1)		
Power Requirement	Power Supply	12-24V DC-IN, Power adaptor 120W		
	Power Type	Optional ATX/AT mode, ATX default		
Power Consumption	Typical (OS idle mode)	13.36W	12.35W	12.93W
	Max. (Full loading)	46.92W	25.19W	31.6W
Environment	Operational Temperature	Fanbased: -20-50 °C w/o airflow (NX 16G) Fanless: -20-50 °C w/0.7 m/s airflow (NX 8G) & -10-50 °C w/0.7 m/s airflow(NANO 8G)		
	Operating Humidity	95% @ 40 °C (non-condensing)		
	Vibration	3 Grms @ 5 ~ 500 Hz, random, 1 hr/axis		
Mechanical	Dimensions (W x D x H)	138 x 110 x 57 mm		
	Weight	1.2 kg		
	Mounting Support	Wall mount/Din rail		
Operating System	Linux	Ubuntu 22.04 LTS with JetPack 6.2		
Software Support	Software API	Edge AI SDK compatible		
Certifications	EMC/Safety	CE/FCC Class B, CB, UL, CCC and BSMI (No RED Certificate)		

*Limited to 20W TDP

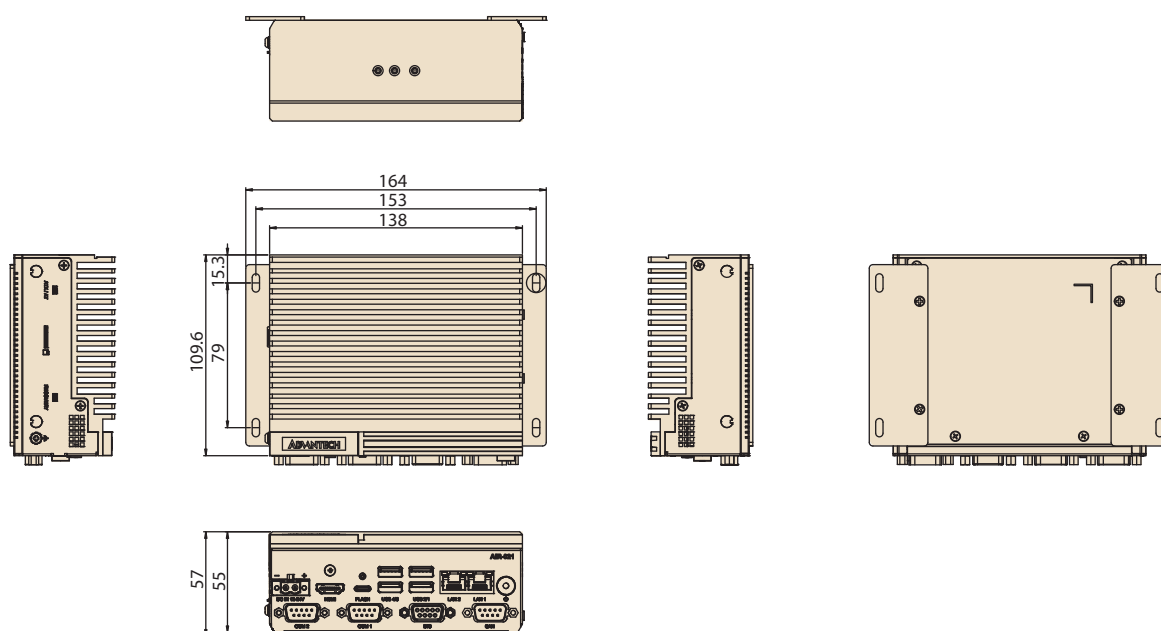
Dimensions

Unit: mm [inch]

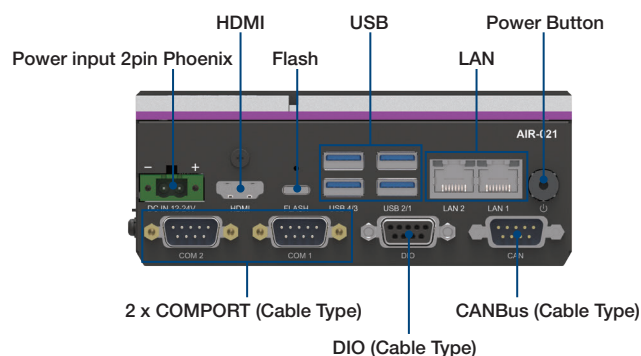
Orin™ NX 16G (Fanbased)



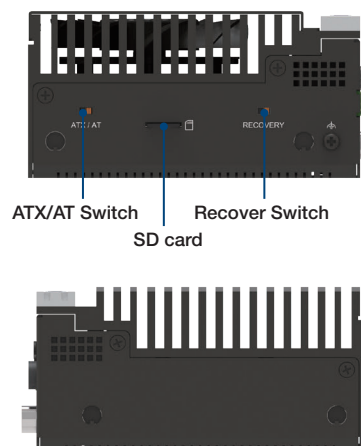
Orin™ NX 8G/Orin Nano™ 8G (Fanless)



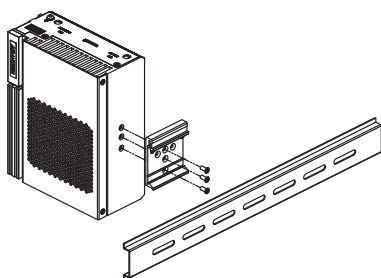
Front Panel I/O Mechanical Layout



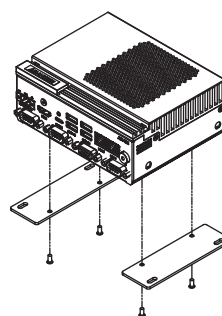
Side Panel I/O Mechanical Layout



Din-rail



Wall-mount



Ordering Information

Part No.	Thermal solution	NVIDIA Module	NVIDIA Module Memory	NVIDIA Module eMMC	Storage	HDMI	GbE	USB	CANBus	RS-232/422/485	GPIO	Power input	Operating Temperature	Made in
AIR-0210-S0A1U	Fanbased	Orin™ NX	16GB LPDDR5	N/A	Pre installed 128 GB SSD in M.2 2280	1	2	4	1	2	1	12-24V _{oc}	-20~50 °C	Taiwan
AIR-0210-B0A1U	Fanless	Orin™ NX	8GB LPDDR5			1	2	4	1	2	1	12-24V _{oc}	-20~50 °C	China
AIR-021R-S7A1U	Fanless	Orin Nano™	16GB LPDDR5		Pre installed 128 GB SSD in M.2 2280	1	2	4	1	2	1	12-24V _{oc}	-10~50 °C	China
AIR-0210-S0A1	Fanbased	Orin™ NX	16GB LPDDR5			1	2	4	1	2	1	12-24V _{oc}	-20~50 °C	Taiwan
AIR-0210-B0A1	Fanless	Orin™ NX	8GB LPDDR5		NA	1	2	4	1	2	1	12-24V _{oc}	-10~50 °C	China
AIR-021R-S7A1	Fanless	Orin Nano™	16GB LPDDR5			1	2	4	1	2	1	12-24V _{oc}	-10~50 °C	China
AIR-0210-S0A2U	Fanbased	Orin™ NX	16GB LPDDR5		NA	1	2	4	1	2	1	12-24V _{oc}	-20~50 °C	Taiwan
AIR-0210-B0A2U	Fanless	Orin™ NX	8GB LPDDR5			1	2	4	1	2	1	12-24V _{oc}	-10~50 °C	China
AIR-021R-S7A2U	Fanless	Orin Nano™	16GB LPDDR5		NA	1	2	4	1	2	1	12-24V _{oc}	-10~50 °C	China
AIR-0210-S0A2	Fanbased	Orin™ NX	16GB LPDDR5			1	2	4	1	2	1	12-24V _{oc}	-10~50 °C	China
AIR-0210-B0A2	Fanless	Orin™ NX	8GB LPDDR5		NA	1	2	4	1	2	1	12-24V _{oc}	-10~50 °C	China
AIR-021R-S7A2	Fanless	Orin Nano™	16GB LPDDR5			1	2	4	1	2	1	12-24V _{oc}	-10~50 °C	China

*The system OS will be pre-installed in a 128GB NVMe M.2 SSD.

Packing List

Part Number	Description	Quantity
AIR-021	NVIDIA AI Inference System	1
1652000099	Phoenix connector counterpart	1
-	Simplified Chinese User Manuel	1
-	Wall Mount Kit for AIR-021	1
-	Thermal-Pad kit (M.2 2242 storage & 3052 5G module)	1

Operating System

Part Number	Description
20706UJTNS0035	Ubuntu Desktop 24.04 LTS for AIR-021 V300

Advantech SUSI is a device management and system monitoring suite for hardware configuration, control, and status monitoring. SUSI information: <https://github.com/ADVANTECH-Corp/SUSI>

Optional Item for Default SKU

Part Number	Description
96PSA-A120W24T2-4	Power Adapter 24V 120W
1702002600	Power Cord UL 3P 10A 125V 183cm (US)
1702002605	Power Cord EU 3P 10A 250V 183cm (EU)
1702031801-11	Power Cord BSI 3P 10A 250V 183cm (UK)
1700000237	Power Cord PSE 3P 12A 125V 183cm (Japan)
1700013977	Power Cord CCC 3P 10A 250V 200cm 90°(China)
1960015198T011	Din Rail Kit for AIR-021
AIW-170BQ-001	Qualcomm Wifi6E M.2 2230 E-Key
1751000622-01	1x Cable Ant. L150mm for WIFI
1751000651-01	1x Antenna for WIFI
AIW-356DQ-E01	Qualcomm 5G M.2 3052 B-Key
1751000625-01	1x Cable Ant. L150mm for 5G
1750009372-01	1x Antenna for 5G
1700034631-01	1x M cable USB-A 4P(M)/USB-C 24P(M) 90cm (flashing cable)
1700031582-01	1pcs F Cable D-SUB 9P(M)/1x5P-1.25 20cm (debug cable)

Note: If Wi-Fi/5G module is required, the package must include the module, antenna, and antenna cable

Inference Kit | Production-Ready AI Inference on Edge Devices

Provides a unified and hardware-aligned runtime for deploying and validating AI inference on edge devices

It simplifies integration across CPUs, GPUs, and AI accelerators while enabling performance benchmarking and compatibility verification on target hardware. Designed for production use, Inference Kit helps hardware partners ensure stable, scalable, and repeatable AI deployment across product lines.



The banner features the ADI-ANTECH logo on the left. The central focus is a screenshot of the EdgeAI SDK Inference Kit interface, which displays various performance metrics and graphs. To the right of the interface, the text 'EdgeAI SDK Inference Kit' is prominently displayed, followed by the subtitle 'Streamlined Edge Inference'. Below this, four key features are listed: 'Ready-to-Run Inference Runtime', 'Accelerator-Aware Optimization', 'Stable Edge Production Stack', and 'Unified Inference Interfaces'. At the bottom of the banner, three images illustrate the kit's applications: a robotic arm in a factory, a self-driving car on a road, and a warehouse with automated storage and retrieval systems.

Benefits and Features



Unified Inference Runtime

- Consistent inference across CPUs, GPUs, and accelerators
- Vendor-optimized runtime integration
- Built-in UniIntra acceleration framework
- Optimized inference pipelines and runtime efficiency



Hardware Validation

- Benchmarking on target devices
- OS and accelerator compatibility validation
- Performance and stability verification



Production-Ready Deployment

- Stable, long-running inference operation
- System monitoring and observability support
- Designed for scalable edge deployment



Global Customer Support

- System reliability certification
- Inference computing enablement
- Edge-to-cloud scalability collaboration

