AFE-R750

NVIDIA® Jetson Orin™ NX / AGX Orin™ AMR Control System

Features

- AMR AI Controller Board up to 275 TOPS AI computing
- Dedicated I/Os for AMR: 4xGbE, 2xCOM, DIO, CANFD
- Sensor connection for camera, LiDAR, IMU...etc.
- Supports Ubuntu 22.04, JetPack 6.1SDK
- IEC 61000-6-4 Heavy Industry Certificate
- Supports Advantech Robotic Suite

Specifications

Processor System	NVIDIA Jetson Series	Optional Orin NX 16GB	Optional AGX Orin 32GB/64GB
	CPU	8-core NVIDIA Arm® Cortex A78AE v8.2	8/12-core NVIDIA Arm® Cortex A78AE v8.2
	GPU	1024-core NVIDIA Ampere GPU with 32 Tensor Cores Maximum Operating Frequency: 918MHz	1792/2048-core NVIDIA Ampere GPU with 56/64 Tensor Cores, Maximum Operating Frequency: 930MHz/1.3GHz
	AI Performance Reference	Up to 100 Sparse TOPs (INT8)	Up to 200/275 Sparse TOPS (INT8)
	TDP	10~25W	15~40/50W
	Memory	16GB 256-bit LPDDR5 DRAM	32/64GB 256-bit LPDDR5 DRAM
	Flash	NA	64GB eMMC5.1
Ethernet	Interface	RJ-45	
	Controller	Intel® i226	
	Speed	4 x GbE	4 x 2.5GbE
Display	HDMI	1 x HDMI 2.0 (Max. resolution 3840 x 2160 @ 24Hz)	
IO Ports	USB	4 x USB 3.2 Type A	
	OTG USB	1 x Type C USB (for system recovery only)	
	CANBus	1 x isolated CANFD 1Mbps/2Mbps	2 x isolated CANFD 1Mbps/2Mbps
	DI/DO	8bit isolated DIO	16bit isolated DIO
	COM	2 x RS232/422/485	
	Remote switch	LED/WDT/PWS/GND/RESET/Debug	
	Fan	1x Fan connector (12V/1A)	
	Switch	AT/ATX	
Expansion	M.2 E key	1 x 2230 (PCIex1, USB2)	
	M.2 B key	1 x 3042/3052 (PCIex1, USB2, SIM)	
	GMSL	4 x FAKRA (Optional)	4 or 8 x FAKRA (Optional)
	IMU	BOSCH BMI088 6-axis (On Board), Movella Xsens MTi3 AHRS 9-axis (Only for AGX, optional by AFE-RM05 with AFE-RM04-8PA1)	
Others	TPM	TPM2.0	
	Time Sync	Supports GPS PPS signal (optional)	
Storage	M.2 M key	1 x M.2 2280 (PCIex4)	
Power	Power Supply voltage	20~28V	
	Power Type	ATX/AT mode, ATX default	
Environment	Operational Temperature	-10 ~ 55°C with 0.7 m/s air flow	32GB: -10 ~ 60°C with 0.7 m/s air flow 64GB : -10 ~ 50°C with 0.7 m/s air flow (MaxN MODE_50W on AMK-A0057 fan kit) Note: 64GB requires fan kit for optimal temperature management.
	Operating Humidity	95% @ 40 °C (non-condensing)	
	Vibration	3 Grms @ 5 ~ 500 Hz, random, 1 hr/axis	
Mechanical	Dimensions (W x D x H)	177 x 174 x 60 mm	177 x 174 x 80 mm
	Weight	1.83Kg	2.66Kg
	Mounting Support	Wall mounting	
Operating System	Linux	Ubuntu 22.04 LTS with JetPack 6.1 (JetPack 7.2 Coming Soon)	
Software Support	ROS2	Ready by Advantech Robotic Suite	
Certifications	EMC/Safety	CE/FCC Class B, CB, UL, CCC and BSMI (No RED Certificate)	

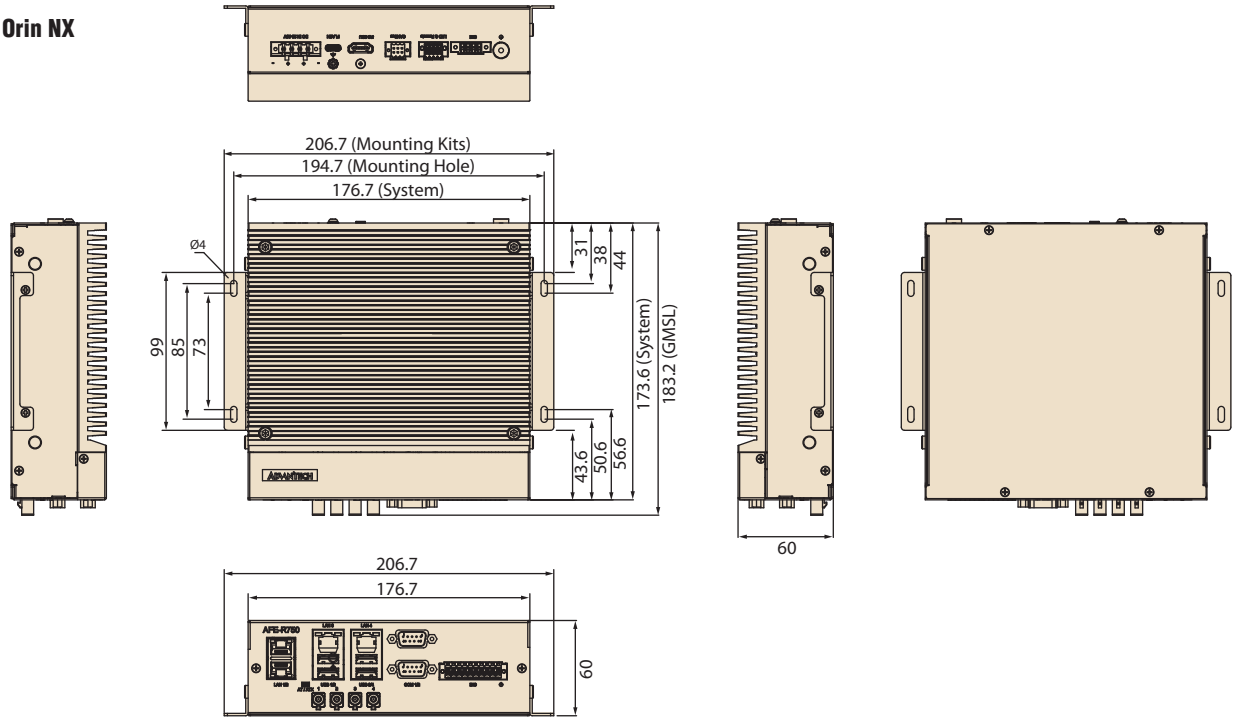
All product specifications are subject to change without notice.

Last updated: 27-Oct-2026

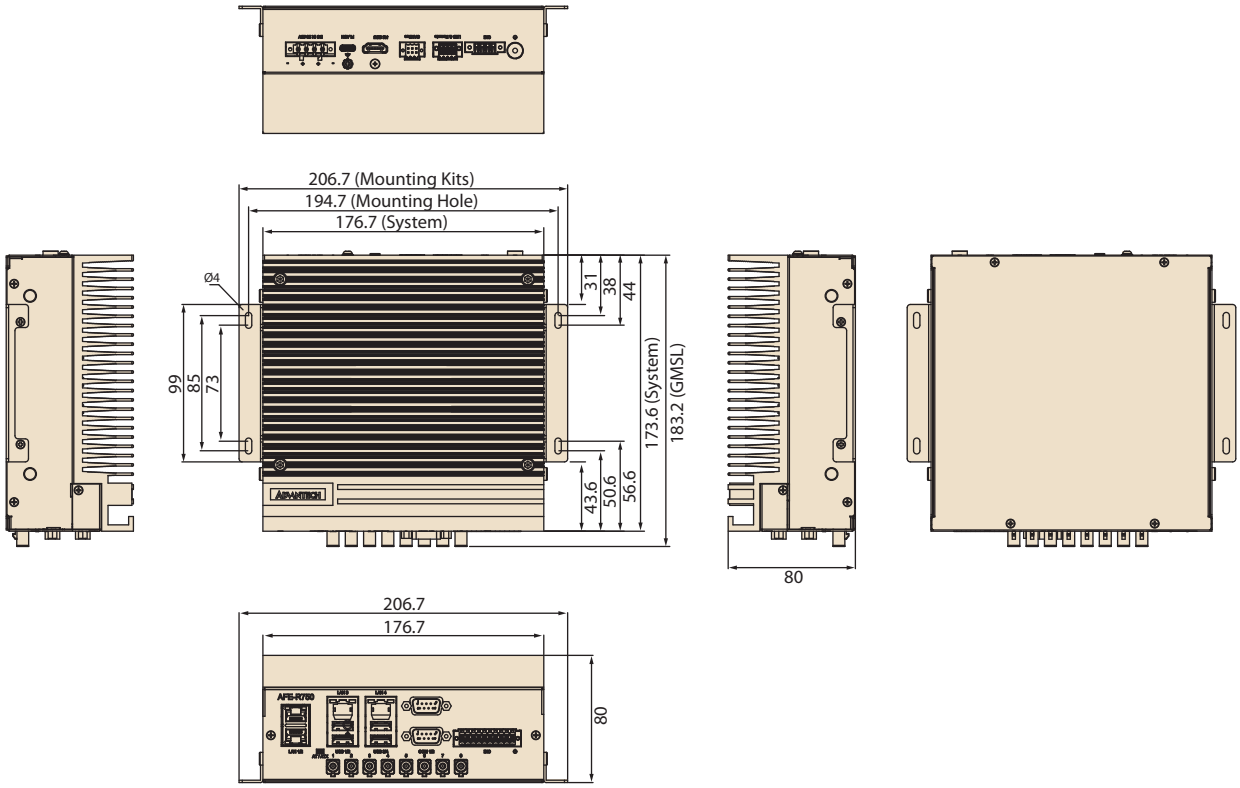
Dimensions

Unit: mm

Orin NX



AGX Orin



Front Panel I/O Mechanical Layout

Orin NX

AGX Orin

Rear Panel I/O Mechanical Layout

Orin NX

AGX Orin

Ordering Information

Part No.	Description
968DD00269	NVIDIA Jetson AGX Orin 64GB Module
968DD00255	NVIDIA Jetson AGX Orin 32GB Module
968DD00537	NVIDIA Jetson Orin NX 16GB Module

Part No.	Module	Memory	eMMC	NVME	HDMI	GbE	USB	CANBus	COM	DIO	Power input	Made in
AFE-R750-X1A1U	AGX Orin	64GB	64GB	Optional	1	4	4	2	2	16bit	20-28V_{DC}	Taiwan
AFE-R750-X2A1U	AGX Orin	32GB	64GB	Optional	1	4	4	2	2	16bit	20-28V_{DC}	Taiwan
AFE-R750-M1A1U	Orin NX	16GB	-	128GB	1	4	4	1	2	8bit	20-28V_{DC}	Taiwan
AFE-R750-X0A1U	Without Jetson module	Barebone for AGX Orin 32/64GB	Optional	Optional	1	4	4	2	2	16bit	20-28V_{DC}	Taiwan
AFE-R750-M0A1U	Without Jetson Module	Barebone for Orin NX 16GB	-	Optional	1	4	4	1	2	8bit	20-28V_{DC}	Taiwan

Packing List

Part Number	Description
1960086357N021	Mounting kit (default qty:2)
1652003234	DC IN terminal block
1652008233-01	CAN BUS terminal block
1652005282	FAN terminal block
1652008721-01	LED & Remote terminal block
1652008720-01	DIO terminal block

Compatible Sensors List

For comprehensive hardware integration details, please visit the Sensor Selector

Optional Item for Default SKU

Part Number	Description
96PSA-A230W24P4-3	AC to DC adapter, DC 24V 230W, -20 ~ 60 °C
1702002600	Power cable 3-pin 183cm, USA type
1702002605	Power cable 3-pin 183cm, EU type
1702031801-11	Power cable 3-pin 183cm, UK type
1700000237	Power cable, 3-Pin 183cm, PSE type
1751000759-01	FAKRA Cable 1M, Z Type
199L000041S000	USB Bracket Nylon
1990040953S000-CM	Cable tie 120x2.5x1.1 Black
AFE-RM04-4PA1*	MAX96712, 4ports GMSL for Orin NX and AGX Orin
AFE-RM04-8PA1*	MAX96712, 8ports GMSL for AGX Orin
AMK-A0062	AFE-R750 4ports GMSL bracket
AMK-A0063	AFE-R750 8ports GMSL bracket
AMK-A0057	External Fan kit for AFE-R750

*Please order GMSL bracket along with the GMSL daughter board.