X6-ORN

NVIDIA® Jetson Orin
Edge AI Compact Fanless Embedded System

KEY FEATURES

Nvidia Edge AI engine
NVIDIA® Jetson Orin Nano™ or NX

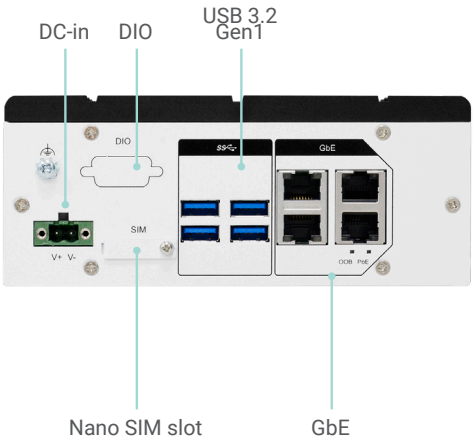
Multi GbE ports with PoE
Four RJ45 GbE ports and optional 2x PoE

OOB Support
Optional OOB (out-of-band) support

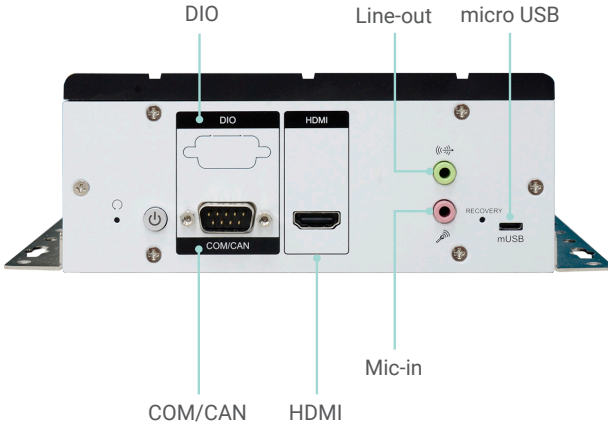
Multiple Expansions
1 M.2 2230 E-Key, 1 M.2 2280 M-Key,
1 M.2 3042/3052 B-Key

Rich I/O
Audio, RS232, CAN bus, 4 USB 3.2, DIO, HDMI

PANEL



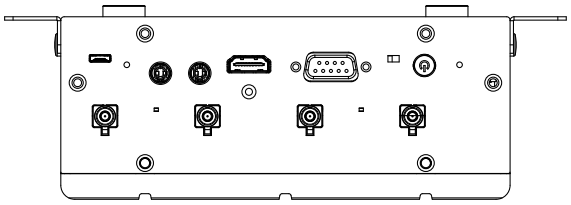
Front View

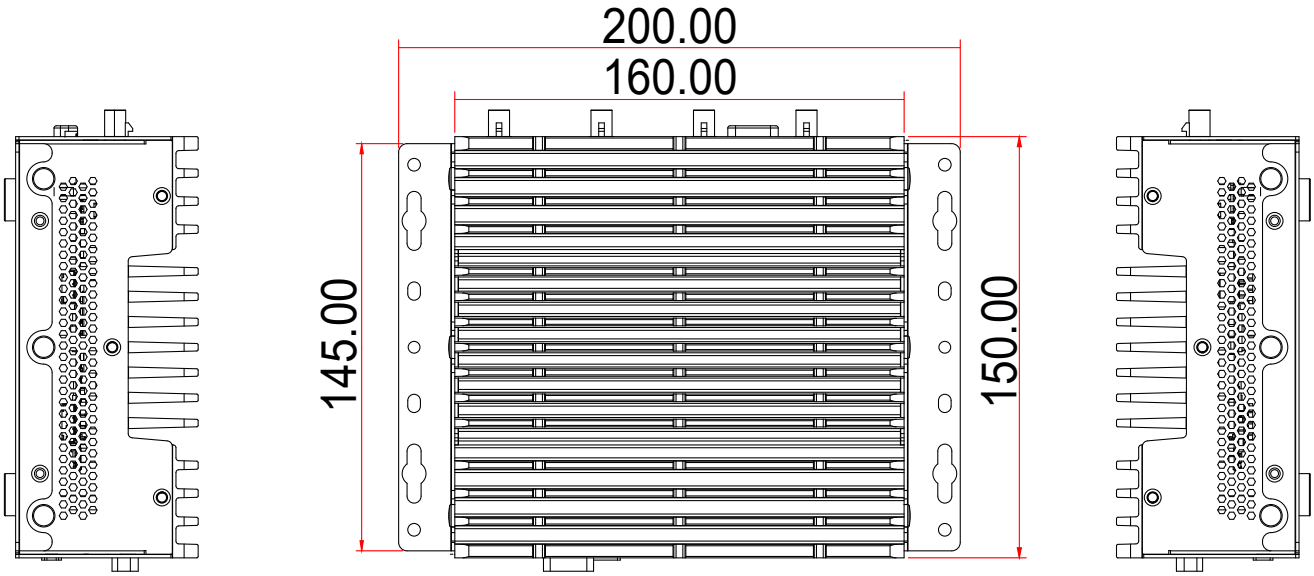


Rear View

DIMENSIONS

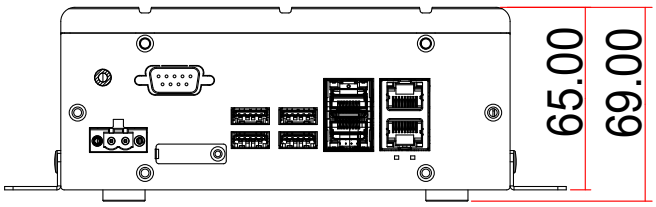
Rear View





Left View

Right View



Front View

SPECIFICATION

SYSTEM	**SOM**	NVIDIA® Jetson Orin Nano™ 4GB, 7-10W NVIDIA® Jetson Orin Nano™ 8GB, 7-15W NVIDIA® Jetson Orin NX 8GB, 10-20W NVIDIA® Jetson Orin NX 16GB, 10-25W
	Processor	6/8-core Arm® Cortex®-A78AE v8.2 64-bit CPU
	GPU	1024-core NVIDIA Ampere architecture GPU with 32 Tensor Cores for Jetson Orin Nano™ 8GB and Orin NX 8/16GB, 40 TOPS 512-core NVIDIA Ampere architecture GPU with 16 Tensor Cores for Jetson Orin Nano™ 4GB, 20 TOPS
	Memory	8GB 128-bit LPDDR5 68 GB/s for Orin Nano™ 8GB 4GB 64-bit LPDDR5 34 GB/s for Orin Nano™ 4GB
		16GB 128-bit LPDDR5 102.4GB/s for Orin NX 16GB 8GB 128-bit LPDDR5 102.4GB for Orin NX 8GB
WATCHDOG TIMER	**Watchdog Timer**	Built-in NVIDIA® Jetson Orin™
GRAPHICS	**Display**	HDMI
STORAGE	**Internal**	M.2 2242/2280 M key (PCIe x4)
EXPANSION	**Onboard**	1 x M.2 Key E 2230 slot (USB 2 +PCIex1 signal) for Wi-Fi 6E 1 x M.2 Key B 3042/3052 slot (USB3 signal) for 5G/LTE with Nano SIM
ETHERNET	**Controller**	Four RJ45 GbE ports from 4x Intel i210 Supports 2x 15W PoE ports upon request
LED	**Indicators**	1 x PoE 1 x OOB
FRONT I/O	**Ethernet**	4 x RJ45 GbE connectors
	USB	4 x USB 3.2 Gen1 1 x micro USB for OS Flash
	SIM	accessible Nano SIM slot (covered by bracket)
	DC in	1 x 2-pin power terminal block
REAR I/O	**CAN bus/ COM**	1 x DB-9 for 1 RS232(Tx,Rx) and 1 CAN bus
	DIO	1 DB-9 for 4 DI/ 4 DO
	Audio	Mic-in, Line-out
	Display	1 x HDMI
Antenna	**Antenna**	6 x antenna holes
ON BOARD	**On board**	CPU fan header from EC Recovery switch for image update Reset button Power button
POWER	**Type**	9-36V DC
	Connector	1x 4-pin terminal block
	RTC Battery	CR2032
OS SUPPORT	**Linux**	Ubuntu 22.04
MECHANISM	**Mounting**	Wall mount (mounting brackets and screws) DIN mount by optional
	Dimensions (W x H x D)	Approx. 165 x 65 x 150 mm
	Weight	1.98kg
ENVIRONMENT	**Operating Temperature**	-20°C to 60°C
	Storage Temperature	-40°C to 85°C
	Relative Humidity	5 to 95% RH (non-condensing)
STANDARDS AND CERTIFICATIONS	**Shock**	**Operation** IEC 60068-2-27 Test Ea: Shock test Half-sine, 3G @ 11ms, 18 Shock ±X, ±Y, ±Z (each axis 3 times) **Non- Operation** IEC 60068-2-27 Test Ea: Shock test Half-sine, 5G @ 11ms, 18 Shock ±X, ±Y, ±Z (each axis 3 times)
	Vibration	**Operation** IEC 60068-2-64 Test Fh: Vibration board-band random test Random,2Grms @ 5~500 Hz, 30min. **Non- Operation** IEC 60068-2-6 Test Fc: Vibration Sinusoidal Test Sweep sine, 3Grms @ 10~500Hz, 30min.
	Certifciation	CE, FCC Class A, RoHS

ORDERING INFORMATION

Model Name	SOM	Memory	Display	USB	Ethernet	CAN bus/ COM/ DIO	Audio
X6-ORN-NN4	NVIDIA® Jetson Orin Nano™	4GB	HDMI	4 USB 3.2, micro USB	4 GbE	1 DB-9 CAN bus/Serial, 1 DIO	1 Mic-in, 1 Line-out
X6-ORN-NN8	NVIDIA® Jetson Orin Nano™	8GB					
X6-ORN-NX8	NVIDIA Jetson Oin NX	8GB					
X6-ORN-NX16	NVIDIA Jetson Oin NX	16GB					

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