

Industrial Edge AI Computers
DX-U1220 Series



* Specifications, color and design of the products are subject to change without notice.

Features

- Edge AI accelerator equipped with NVIDIA® Jetson Xavier NX™

Equipped with NVIDIA® Jetson Xavier NX™, the DX-U1200 series can be used in fields requiring on-site AI inference processing, such as image inspection and predictive maintenance.

- Standard-equipped with NVMe storage

The standard-equipped high-capacity NVMe storage offers reliable operation with no need to worry about the capacity of the Jetson Xavier NX™ module's eMMC.

- Long-term supply and maintenance

Long-term product supply is provided, as well as repair and maintenance services. This can significantly reduce life cycle costs, including verification and modification man-hours that were needed with every model change.

- Highly reliable and long-life components

The high-reliability long-life design utilizes accumulated knowledge about BOX-PC embedded computers. The DX-U1200 can be reliably used for high-availability systems.

- Two Gigabit LAN ports for alternating connections between different network layers

This product is equipped with two Gigabit LAN ports. This makes it ideal for edge computing that alternates connections between different network layers such as between video acquisition from a camera and higher-order information system networks.

- Flexible installation

With the L-shaped mounting bracket (included as standard), the product can be installed on a wall or on the back of a VESA (100 mm) mount-compatible LCD monitor. It can also be mounted on a 35-mm DIN rail with a DIN rail adapter (included as standard).

- Supports ambient temperatures from -20°C to 60°C

This product achieves stable operation in a wide temperature range of -20 to +60°C (an airflow of 0.7m/s) and it can be used in the various environment. (Note that the temperature range is between -20°C and 50°C when the product is used with the PCI Express Low Profile card). * Derating occurs due to the load conditions. See the "Installation Requirements" in this manual for details.

This product is an industrial computer suitable for AI inference processing equipped with the NVIDIA® Jetson Xavier NX™ module.

It is equipped with two Gigabit LAN ports, an HDMI port, four USB ports, general I/O ports, a serial port, and an RTC (real-time calendar/clock) for flexible installation in addition to advanced environmental resistance. The computer also comes standard with a high-capacity NVMe storage for stress-free use in practical applications.

This product includes sheet metal (pre-attached) and connector caps as simple dust control measures to prevent dust and dirt from entering through the vents.

Similar to the developer kit for the software environment, Ubuntu is pre-installed and JetPack SDK is available to run applications created with the developer kit.

Expansion slot models include a low-profile PCI Express slot x1 for expanded functionality by means of CONTEC's rich variety of low-profile PCI Express cards.

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* Visit the CONTEC website to check the latest details in the document.

* The information in the data sheets is as of October, 2022.

Specifications

Function specification

Item	Description			
	DX-U1220-3E0212	DX-U1220P1-3E0212		
Jetson Module	Module	NVIDIA® Jetson Xavier NX™		
	CPU	ARMv8.2 (64-bit) heterogeneous multi-processing (HMP) CPU		
	GPU	384 NVIDIA® Volta™ cores, 48 Tensor cores		
	DL Accelerator	2 x NVDLA (NVIDIA Deep Learning Accelerator) engine		
	Memory	8GB 128-bit LPDDR4		
	Storage	16 GB eMMC		
NVMe Storage	256 GB			
Interface	Display	HDMI2.0 x 1		
	USB	USB 3.2 Gen2 (USB3.1) Type A x 4, USB 2.0 micro B x 1 (for OS writing)		
	LAN	1000BASE-T/100BASE-TX/10BASE-T x 2		
	MicroSD	MicroSD memory card slot, SD/SDHC/SDXC support		
	Digital Input	Opto-coupler isolation input (Compatible with current sink output)		
		Input voltage resistance	1000V	
		The number of input signal ports	4 (2 ports of DI can be used for DO)	
		Open-circuit impedance	10kΩ or more	
		Short-circuit impedance	500Ω or less	
	Digital Output	Response time (DI)		within 200μsec
		Solid State Relay output		
		Output voltage resistance	1000V	
		The number of output signal channels	2 (switchable with DI)	
External power supply		12 - 24 VDC		
Serial Communication	Maximum output voltage/current	26.4V/100mA		
	Response time	within 2msec		
	ON resistance	8Ω or less (at 25°C)		
	OFF leakage current	4μA or less (at 25°C)		
M.2 Slot *1	1 port (Can be switched to RS-232C, RS-422, or RS-485)			
PCIe Slot	-	Low Profile PCI Express(x1) x 1		
Switch	Power switch, Setting switch			
LED	Power LED, Status LED			
Real Time Clock	Lithium backup battery life : 10 years or more The real-time clock is accurate within ±3 minutes (at 25°C) per month.			
Power Supply	Rated Input Voltage	12 - 24VDC		
	Input Voltage Range	10.8 - 26.4VDC		
	Current Consumption (I _{Max})	12VDC 3.7A, 24VDC 1.9A	12VDC 5.4A, 24VDC 2.7A	
	Connector	2-piece 3.5mm pitch 3-pin terminal (V+, V-, FG)		
Physical Dimensions (mm)	191.2(W)×92(D)×43(H)	191.2(W)×92(D)×75(H)		
	(No bracket or projection included)	(No bracket or projection included)		
	With side sheet metal removed:	With side sheet metal removed:		
	190(W)×92(D)×43(H)	190(W)×92(D)×75(H)		
(No bracket or projection included)	(No bracket or projection included)			
Weight	1.1kg approx. (No bracket included)		1.5kg approx. (No bracket included)	

Item	Description	
	DX-U1220-3E0212	DX-U1220P1-3E0212
Installation Method	DIN-rail mounting, Wall/VESA installation	
Software	OS	Ubuntu 18.04.5
	SDK	JetPack 4.6

*1 The product is equipped with M2 Key-E and M2 Key-B slots. Please contact your retailer when considering installation of an M2 module.

Environment Requirements

Item	Description
Operating Temperature *2	-20 - +60°C, airflow 0.7m/s, Environment: 50% of average load (With PCIe card attached: -20 - +50°C)
Storage Temperature	-20 - +60°C
Humidity	10 - 90%RH (No condensation)
Floating dust particles	Not to be excessive
Corrosive gases	None
Line-noise resistance	Line noise
	Static electricity resistance
Vibration resistance	Sweep resistance
	Impact resistance
Grounding	Class D grounding, SG-FG / continuity
Standard	VCCI Class A, FCC Class A, CE Marking (EMC Directive Class A, RoHS Directive) *3, UKCA

*2 Derating occurs due to the load conditions. For more details on this, refer to "Installation Requirements".

*3 To meet CE's requirements, DIO cable should be 30 meters or shorter.

Included Items

Name	DX-U1220-3E0212	DX-U1220P1-3E0212
	[Base Model]	[Expansion Slot Model]
	Pcs.	Pcs.
Product	1	1
Power Connector	1	1
DIO Connector	1	1
Power/DIO Connector Removal Prevention Fitting	1	1
L-Shape Fitting	2	2
DIN-Rail Mounting Bracket	2	2
Fillister Head Screw (M2.6x4, black)	1	1
Countersunk Screw (M3x5, black)	4	4
Washer Assembled Screw (M3x6, Ni)	2	3
Hexagon Head Screw with Captive Washer (M4x10, black)	4	4
Cable Tie	1	1
LAN connector cap	2	2
USB connector cap	4	4
HDMI connector cap	1	1
D-SUB connector cap	1	1
Rubber cap	2	2
Product Guide	1	1

Optional Products

Item	Model	Description
AC-DC power unit	CPS-PWD-90AW24-01	DIN rail fitting power supply AC-DC power unit 24V 3.8A
AC adapter	PWA-65AWD9	Switching AC adapter 19VDC 3.42A
Fan unit	BX-FAN-05	External fan for forced air cooling

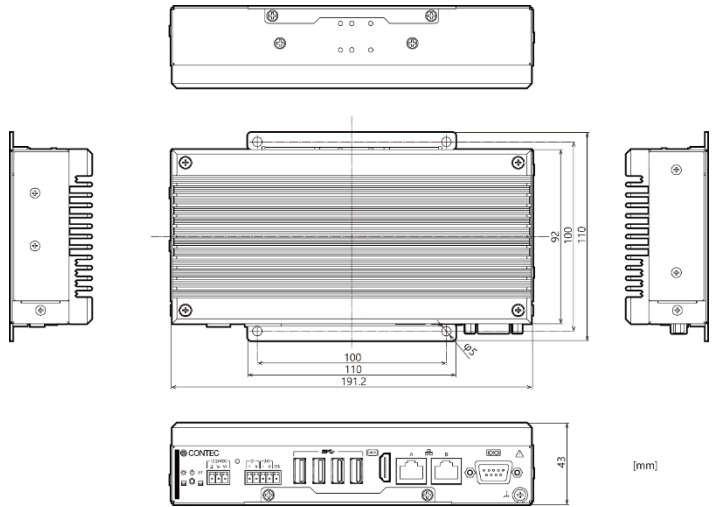
CAUTION

If a product other than our optional one is used, the normal operation may be impaired or the functions may be limited.

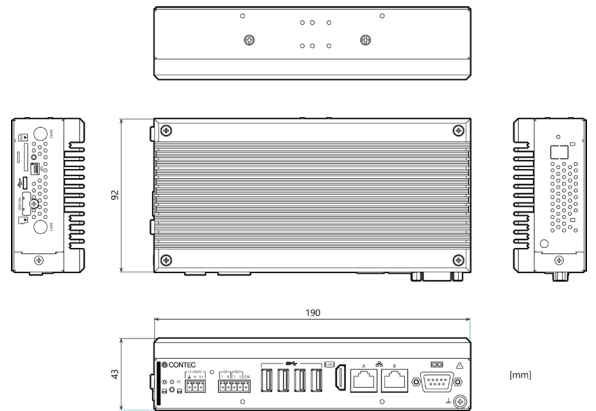
* Visit the CONTEC website for the latest optional products.

External Dimensions

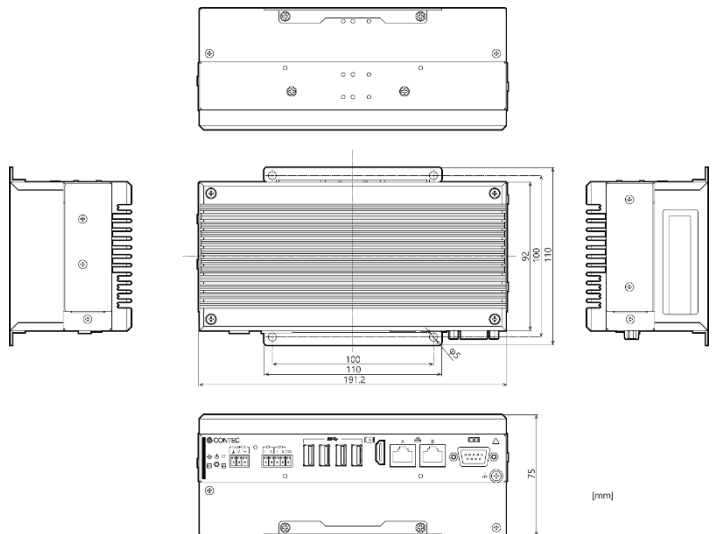
DX-U1220-2E0212(When mounting the L-shape fitting)



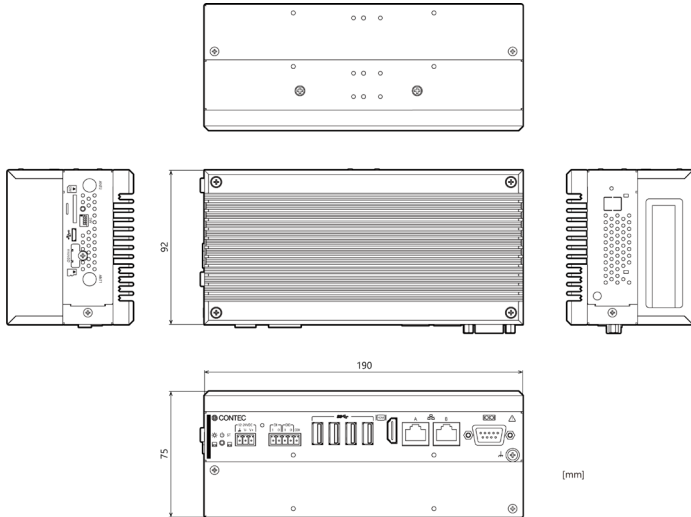
DX-U1220-2E0212 (Side sheet metal removal)



DX-U1220P1-3E0212(When mounting the L-shape fitting)



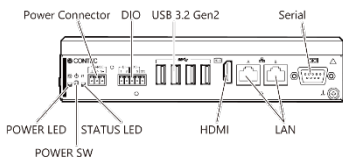
DX-U1210-3E0211 (Side sheet metal removal)



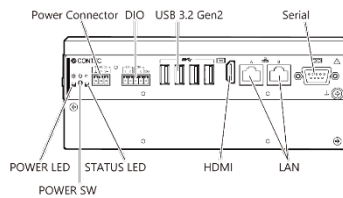
Nomenclature of Product Components

Front

DX-U1220-3E0212

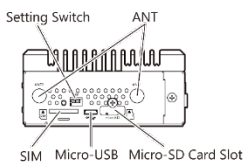


DX-U1220P1-3E0212

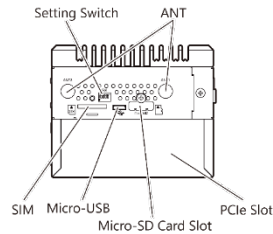


Side(Side sheet metal removal)

DX-U1220-3E0212



DX-U1220P1-3E0211



Name	Function
Front	
POWER SW	This controls the power of the product.
POWER LED	This LED indicates the product is switched on or off.
STATUS LED	This LED indicates the status of the product.
Power Connector	This connector is used to supply the power.
DIO	This is a connector for digital inputs and outputs.
HDMI	Display (19-pin, Receptacle)
DisplayPort (DP)	Display (20-pin, Receptacle)
USB 3.2 Gen2	USB 3.2 Gen2 (USB3.1) TYPE-A Connector
USB 2.0	USB 2.0 TYPE-A Connector
LAN Port	This is a connector port for LAN.
Serial Port	This is the port for serial communication. (Can be used as RS-232C, RS-422, or RS-485.)
Side	
Setting Switch	This switch is used for settings.
Micro-USB	This is a connector port for USB 2.0 Micro-B. It is used for OS writing.
Micro-SD Card Slot	This slot is used to insert a micro-SD card.
ANT	Unused
SIM	Unused
PCIe Slot	This slot is used to insert a PCIe Low Profile card. (Only available for the model with an expansion slot)