Industrial Edge AI Computer
DX-U1200 Series


DX-U1200P1-3E0211


DX-U1200-3E0211


DX-U1210-3E0211

This product is an industrial computer suitable for AI inference processing equipped with the NVIDIA® Jetson Xavier NX™ module.
The product contains Gigabit LAN×2, HDMI, embedded DisplayPort(eDP), USB×2, general-purpose I/O, and RTC. It features installation flexibility and environmental resistance so that practical applications can be realized with confidence.
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.
Simple dustproof models include sheet metal (pre-attached) and connector caps to prevent dust and dirt from entering the product vents.
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.

* The contents in this document are subject to change without notice.
* Visit the CONTEC website to check the latest details in the document.
* The information in the data sheets is as of May, 2023.

Features

- Edge AI accelerator equipped with NVIDIA® Jetson 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.

- 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.

Specifications

Function Specifications

Item		Description	
		DX-U1200-3E0211, DX-U1210-3E0211	DX-U1200P1-3E0211
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	
Interface	Display	HDMI x 1, DisplayPort (eDP) x 1	
	USB	USB 3.2 Gen2 (USB3.1) Type A x 1, USB 2.0 Type A x 1, USB 2.0 micro B x 1 (for OS writing)	
	LAN	1000BASE-T/100BASE-TX/10BASE-T x 2	
	microSD	microSD memory card slot, 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 Response time (DI) within 200μsec	
	Digital Output	Solid State Relay output	
		Output voltage resistance 1000V The number of output signal channels 2 (switchable with DI) External power supply 12 - 24 VDC 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	M.2 Key E, M.2 Key B M.2 Key E can be equipped with Wi-Fi or Bluetooth, and M.2 Key B can be equipped with 4G LTE.	
	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 (Max)	12VDC 2.5A, 24VDC 1.3A	12VDC 4.5A, 24VDC 2.2A
	Connector	2-piece 3.5mm pitch 3-pin terminal (V+, V-, FG)	
Physical Dimensions (mm)		160(W)×92(D)×43(H) (No bracket or projection included)	160(W)×92(D)×75(H) (No bracket or projection included)
Weight		0.9kg approx. (No bracket included)	1.2kg approx. (No bracket included)
Installation Method		DIN-rail mounting, Wall/VESA installation	
Software	OS	Ubuntu 18.04.5	
	SDK	JetPack 4.4.1	

*1 The product is equipped with M.2 Key E and M.2 Key B slots. Please contact your retailer when considering installation of an M.2 module.

Environment Requirements

Item		Description
Operating Temperature *2		-20 - +60°C, airflow 0.7m/s, Environment: 50% of average load (With PCIe board 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	AC Line /±2kV (IEC61000-4-4 Level 3, EN61000-4-4 Level 3)
	Static electricity resistance	Contact discharge /±4kV (IEC61000-4-2 Level 2, EN61000-4-2 Level 2) Air discharge /±8kV (IEC61000-4-2 Level 3, EN61000-4-2 Level 3)
Vibration resistance	Sweep resistance	10 - 57Hz /semi-amplitude vibration 0.15mm, 57 - 500Hz/5.0G 60minutes each in X, Y, and Z directions (JIS C60068-2-6-compliant, IEC60068-2-6-compliant)
Impact resistance		15G half-sine shock for 11ms in X, Y, and Z directions (JIS C 60068-2-27-compliant, IEC 60068-2-27-compliant)
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.

Packing List

	DX-U1200-3E0211 [Base Model]	DX-U1210-3E0211 [Simple dustproof models]	DX-U1200P1-3E0211 [Expansion Slot Model]
Name	Pcs.	Pcs.	Pcs.
Product	1	1	1
Power Connector	1	1	1
DIO Connector	1	1	1
Power/DIO Connector Removal Prevention Fitting	1	1	1
L-Shape Fitting	2	2	2
DIN-Rail Mounting Bracket	2	2	2
Fillister Head Screw (M2.6x4, black)	3	3	3
Countersunk Screw (M3x5, black)	4	4	4
Washer Assembled Screw (M3x6, Ni)	3	3	3
Hexagon Head Screw with Captive Washer (M4x10, black)	4	4	4
Cable Tie	1	1	1
LAN connector cap	0	2	0
USB connector cap	0	2	0
HDMI connector cap	0	1	0
DP Connector Cap	0	1	0
Product Guide	1	1	1
Warranty Certificate	1	1	1
Serial Number Label	1	1	1

List of Options

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

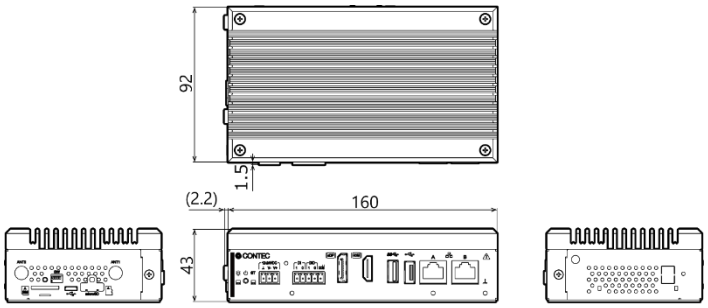
CAUTION

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.

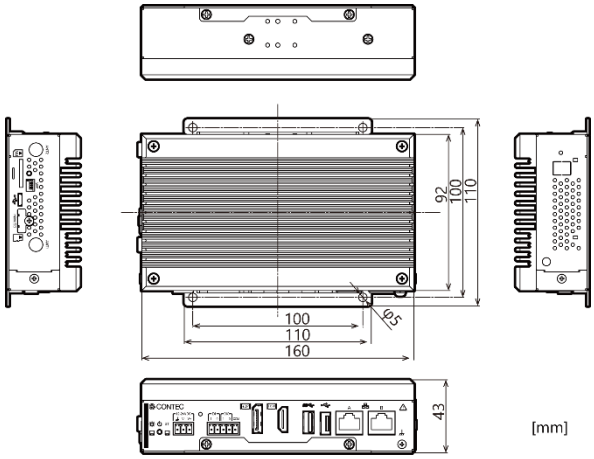
Physical Dimension

DX-U1200-2E0211, DX-U1210-3E0211 (Cap and side sheet metal removal)



[mm]

DX-U1200-2E0211, DX-U1210-3E0211 (Cap and side sheet metal removal, when mounting the L-shape fitting)



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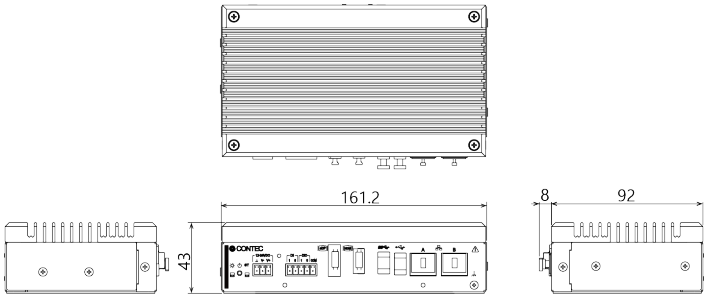
DX-U1210-3E0211 (Attachment of cap and side sheet metal)



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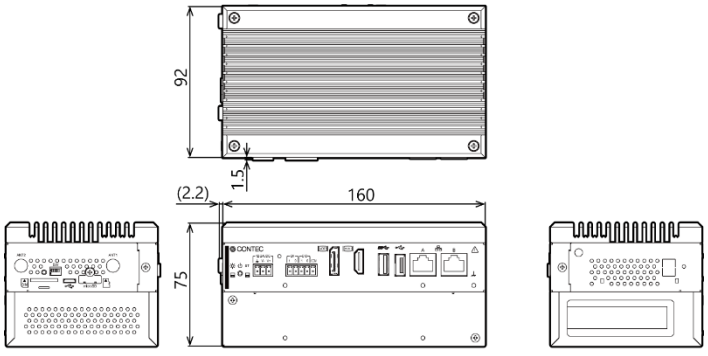
DX-U1200P1-3E0211



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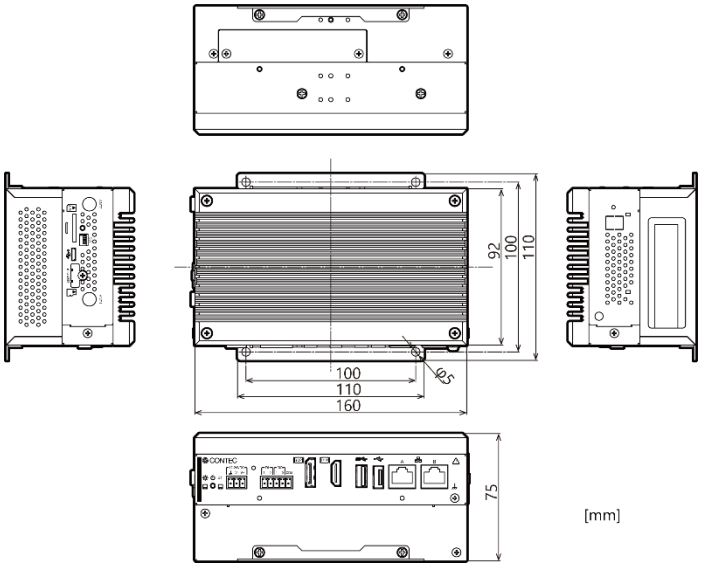
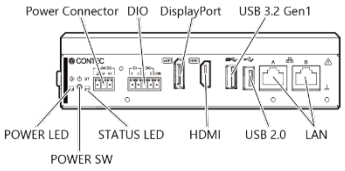
DX-U1200P1-3E0211 (Cap and side sheet metal removal, when mounting the L-shape fitting)



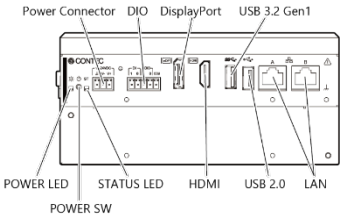
Nomenclature of Product Components

Front

DX-U1200-3E0211, DX-U1210-3E0211

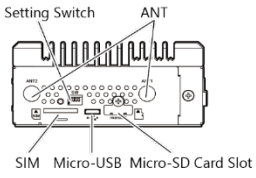


DX-U1200P1-3E0211

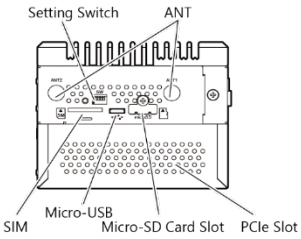


Side

DX-U1200-3E0211, DX-U1210-3E0211

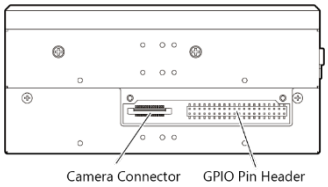


DX-U1200P1-3E0211



Rear

DX-U1200P1-3E0211



Component Function

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 (eDP)	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.
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.
Rear (Only available for the model with an expansion slot)	
Camera Connector	This is a connector port for MIPI-CSI camara interface (Evaluation purposes).
GPIO Pin Header	This is used for GPIO interface (Evaluation purposes).

CAUTION

The camara connector and the GPIO pin header are used for evaluation purposes.
They are aimed for evaluation in the office environment and not intended for use in actual operations (such as operation in low or high temperature environments).