Industrial Edge AI Computers Jetson Orin Nano model
DX-U2100 Series
Industrial Edge AI Computers Jetson Orin NX model
DX-U2200 Series

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

Features

Edge AI accelerator equipped with NVIDIA® Jetson Orin™ NX or Jetson Orin™ Nano
Equipped with NVIDIA® Jetson Orin™ NX or Jetson Orin™ Nano, this product can be used in fields requiring on-site AI inference processing, such as image inspection and predictive maintenance.

"Power failure protection system" features power-off without OS shutdown
This feature protects the NVMe SSD from sudden power failures. The built-in "power failure protection system" function prevents system crashes. The power failure protection system can now be used by applying the JetPack/L4T version (JetPack 5.1.3 [L4T 35.5.0] or later) provided by Contec. When enabled, the power failure protection system saves to RAM the data to write to the NVMe SSD, preventing data from being written to the NVMe SSD.

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.

4G LTE Cat. 4 communication
The lineup also includes products equipped with an LTE SIM-free communication module that complies with the Radio Act of Japan, enabling 4G LTE Cat. 4 communication.
* The wireless communication function of this product can only be used in Japan and requires a separate SIM card contract.

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.

Four Gigabit LAN ports for alternating connections between different network layers
This product is equipped with four 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).

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

It is equipped with four Gigabit LAN ports, an HDMI port, four USB ports, general I/O ports, a serial port, CAN 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.

The LTE model is equipped with an LTE SIM-free communication module, enabling 4G LTE Cat. 4 communication.

* 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 October, 2024.

Supports ambient temperatures from -20℃ to +60℃
This product achieves stable operation in a wide temperature range of -20 to +60℃ (an airflow of 0.7m/s) and it can be used in the various environment.

* Derating occurs due to the load conditions. See the "Installation Requirements" in this manual for details.

Specifications

Function Specifications (DX-U2100-xMxxxx, DX-U2100-4GxMxxxx)

Item		Description	
		DX-U2100-xMxxxx	DX-U2100-4GxMxxxx
Jetson Module	Module	NVIDIA® Jetson Orin™ Nano	
	CPU	6-core Arm® Cortex®-A78AE v8.2 64bit CPU 1.5GHz	
	GPU	- DX-U2100-2Mxxxx, DX-U2100-4GMMxxxx 512-core NVIDIA Ampere GPU with 16 tensor cores 625MHz - DX-U2100-3Mxxxx, DX-U2100-4G3Mxxxx 1024-core NVIDIA Ampere GPU with 32 tensor cores 625MHz	
	DL Accelerator	-	
	Memory	- DX-U2100-2Mxxxx, DX-U2100-4G2Mxxxx 4GB 64bit LPDDR5 34GB/sec - DX-U2100-3Mxxxx, DX-U2100-4G3Mxxxx 8GB 128bit LPDDR5 68GB/sec	
	eMMC Storage	-	
NVMe Storage		- DX-U2100-xM0623, DX-U2100-4GxM0623 256GB 3D TLC - DX-U2100-xM0723, DX-U2100-4GxM0723 512GB 3D TLC - DX-U2100-xM0823, DX-U2100-4GxM0823 1TB 3D TLC	
Interface	Display	HDMI1.4 x 1	
	USB	USB 3.2 Gen2 (USB3.1) Type A x 2 USB 2.0 Type A x 2 USB 2.0 Micro-B x 1 (For OS writing)	
	LAN	1000BASE-T/100BASE-TX/10BASE-T×4 (Built-in Jetson module x 1, Intel® I210 Controller x 3)	
	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℃) OFF leakage current 4μA or less (at 25℃)	
	RS-232C	1port (Non-insulation, 4800bps - 921.6kbps)	
	RS-485	1port (Non-insulation, 4800bps - 921.6kbps)	

Item		Description	
		DX-U2100-xMxxxx	**DX-U2100-4GxMxxxx**
	CAN	CAN2.0A/B 1port (Non-insulation, 10bps - 1Mbps)	
	4G LTE	-	Built-in 4G LTE CAT4 module
	Switch	Power switch, Setting switch, Terminal Switch (RS-485:100Ω±5%, CAN:120Ω±5%)	
	LED	Power LED, Status LED, ACCESS 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	10 - 30VDC	
	Input Voltage Range	9 - 32VDC	
	Current Consumption	12VDC 3.3A (Max.), 24VDC 1.7A (Max.)	12VDC 3.4A (Max.), 24VDC 1.8A (Max.)
	Connector	2-piece 3.5mm pitch 3-pin terminal (V+, V-, FG)	
Physical Dimensions (mm)		190(W) x 92(D) x 45(H) (No bracket or projection included)	
Weight		1.2kg approx. (No bracket included)	1.3kg approx. (No bracket included)
Installation Method		DIN-rail mounting, Wall/VESA installation	
Software	OS	Ubuntu 20.04	
	SDK	JetPack 5.1.2	

Function Specifications (DX-U2200-xMxxxx, DX-U2200-4GxMxxxx)

Item		Description	
		DX-U2200-xMxxxx	**DX-U2200-4GxMxxxx**
Jetson Module	Module	NVIDIA® Jetson Orin™ NX	
	CPU	- DX-U2200-3Mxxxx, DX-U2200-4G3Mxxxx 6-core Arm® Cortex®-A78AE v8.2 64bit CPU 2GHz - DX-U2200-4Mxxxx, DX-U2200-4G4Mxxxx 8-core Arm® Cortex®-A78AE v8.2 64bit CPU 2GHz	
	GPU	- DX-U2200-3Mxxxx, DX-U2200-4G3Mxxxx 1024-core NVIDIA Ampere GPU with 32 tensor cores 765MHz - DX-U2200-4Mxxxx, DX-U2200-4G4Mxxxx 1024-core NVIDIA Ampere GPU with 32 tensor cores 918MHz	
	DL Accelerator	- DX-U2200-3Mxxxx, DX-U2200-4G3Mxxxx NVIDIA® v2 x1 610MHz - DX-U2200-4Mxxxx, DX-U2200-4G4Mxxxx NVIDIA® v2 x2 614MHz	
	Memory	- DX-U2200-3Mxxxx、DX-U2200-4G3Mxxxx 8GB 128bit LPDDR5 102.4GB/sec - DX-U2200-4Mxxxx、DX-U2200-4G4Mxxxx 16GB 128bit LPDDR5 102.4GB/sec	
	eMMC Storage	-	
NVMe Storage		- DX-U2200-xM0623, DX-U2200-4GxM0623 256GB 3D TLC - DX-U2200-xM0723, DX-U2200-4GxM0723 512GB 3D TLC - DX-U2200-xM0823, DX-U2200-4GxM0823 1TB 3D TLC	
Interface	Display	HDMI2.1 x 1	
	USB	USB3.2 Gen2 (USB3.1) Type A x 2 USB2.0 Type A x 2 USB2.0 Micro-B x 1 (For OS writing)	
	LAN	1000BASE-T/100BASE-TX/10BASE-T×4 (Built-in Jetson module x1, Intel® I210 Controller x 3)	
	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)	
	RS-232C	1port (Non-insulation, 4800bps - 921.6kbps)	
	RS-485	1port (Non-insulation, 4800bps - 921.6kbps)	
	CAN	CAN2.0A/B 1port Non-insulation, 10kbps - 1Mbps)	
	4G LTE	-	Built-in 4G LTE CAT4 module
	Switch	Power switch, Setting switch, Terminal Switch (RS-485:100Ω±5%, CAN:120Ω±5%)	
	LED	Power LED, Status LED, ACCESS LED	

Item		Description	
		DX-U2200-xMxxxx	**DX-U2200-4GxMxxxx**
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	10 - 30VDC	
	Input Voltage Range	9 - 32VDC	
	Current Consumption	12VDC 3.7A (Max.), 24VDC 1.9A (Max.)	12VDC 3.8A (Max.), 24VDC 2.0A (Max.)
	Connector	2-piece 3.5mm pitch 3-pin terminal (V+, V-, FG)	
Physical Dimensions (mm)		190(W) x 92(D) x 45(H) (No bracket or projection included)	
Weight		1.2kg approx. (No bracket included)	1.3kg approx. (No bracket included)
Installation Method		DIN-rail mounting, Wall/VESA installation	
Software	OS	Ubuntu 20.04	
	SDK	JetPack 5.1.2	

LTE Specifications (DX-U2100-4GxMxxxx, DX-U2200-4GxMxxxx)

Item		Description
Supported SIM		nanoSIM
Communication method		4G LTE (Cat.4) 3G W-CDMA
Radio frequency		4G LTE supported bands LTE-FDD‥B1/B3/B4/B8/B18/B19/B26/B28 LTE-TDD‥B41 3G W-CDMA supported Band B1/B6/B8/B19
Communication speed *1	4G LTE-FDD	Upload : Maximum 50MBit/sec, Download : Maximum 150MBit/sec
	4G LTE-TDD	Upload : Maximum 35MBit/sec, Download : Maximum 130MBit/sec
	3G W-CDMA	Upload : Maximum 384KBit/sec, Upload (HSUPA) : Maximum 2.2 MBit/sec, Download : Maximum 384KBit/sec, Download (HSDPA) : Maximum 2.8MBit/sec

*1   These are theoretical communication standard values and do not indicate actual data transfer speeds.

Environment Requirements

Item		Description
Operating Temperature *2		-20 - +60°C, airflow 0.7m/s, Environment: 50% of average load
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 - 150Hz/2.0G 40minutes 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		- DX-U2100-xMxxxx, DX-U2200-xMxxxx [Base model] VCCI Class A, FCC Class A, CE Marking (EMC Directive Class A, RoHS Directive) *3, UKCA - DX-U2100-4GxMxxxx, DX-U2200-4GxMxxxx [LTE model] VCCI Class A, TELEC

*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.

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
4G LTE Antenna	CPS-ANT-R3-01	External Antenna 3M
	CPS-ANT-R5-01	External Antenna 5M
External FAN unit	DX-FAN-07	External FAN for forced air cooling

⚠ **CAUTION**

If you use an item other than our optional ones, the normal operation may be impaired or the functions may be limited.

Visit the CONTEC website for the latest optional products.

Physical Dimensions

When an L-shaped bracket is attached
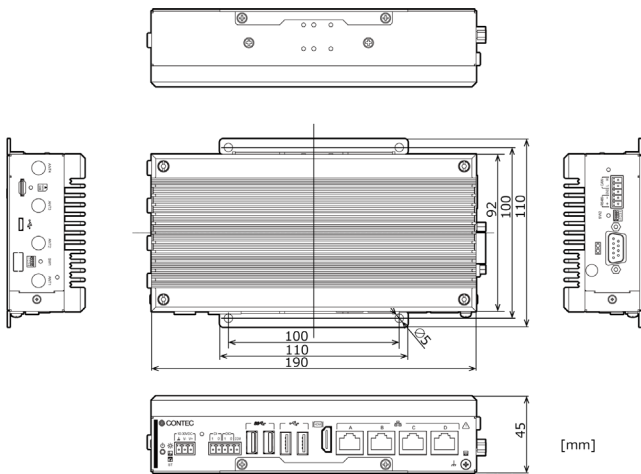
When the antennas are connected
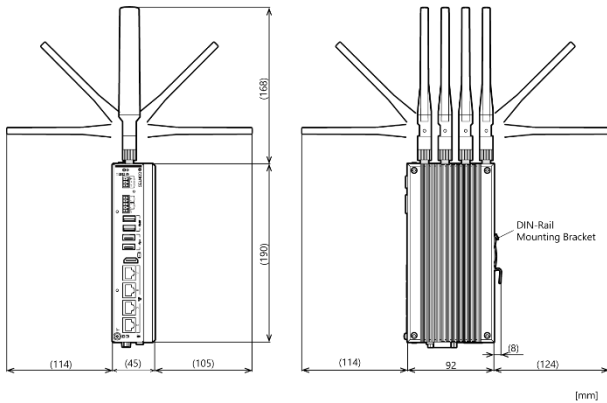
When external FAN is used
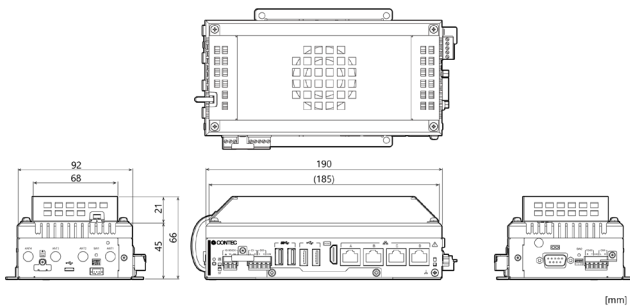
Included Items

| Name	DX-U2100-xMxxxx DX-U2200-xMxxxx [Base Model] Pcs.	DX-U2100-4GxMxxxx DX-U2200-4GxMxxxx [LTE Model] Pcs.
Product	1	1
Power Connector	1	1
DIO, RS-485/CAN Connector	2	2
Card Cover	1	1
Power/DIO Connector Removal Prevention Fitting	1	1
RS-485/CAN Connector Removal Prevention Fitting	1	1
L-Shape Fitting	2	2
DIN-Rail Mounting Bracket	2	2
Fillister Head Screw (M2.6x4, black)	3	3
Countersunk Screw (M3x5, black)	4	4
Washer Assembled Screw (M3x6, Ni)	2	2
Hexagon Head Screw with Captive Washer (M4x10, black)	4	4
Cable Tie	1	1
Antenna	0	2
Product Guide	1	1

Component Name

Front
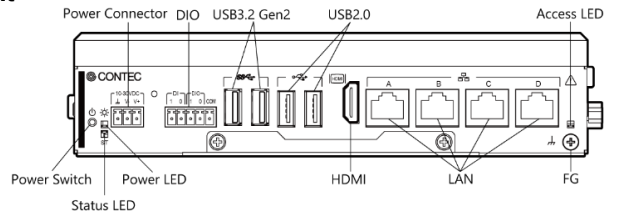
Left side
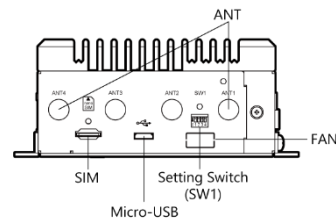
Right side
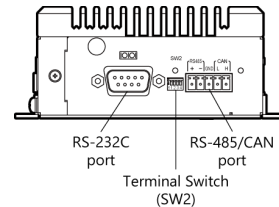
Name	Function
Front	
POWER SW	This controls the power of the product.
POWER LED	This LED indicates the product is switched on or off.
STATUS LED	This LED indicates the status of the product.
ACCESS LED	This LED indicates the status of the SSD.
Power Connector	This connector is used to supply the power.
DIO	This is a connector for digital inputs and outputs.
HDMI	Display (19-pin, Receptacle)
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.

Name	Function
FG	This is the frame ground connector used to ground the product.
Left side	
Setting Switch (SW1)	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.
ANT	These are the antenna connectors for 4G communication.
SIM	This is the SIM slot for 4G communication.
FAN	This is a connector for connecting an external FAN unit.
Right side	
RS-232C port	This is the port for RS-232C communication.
Terminal Switch Terminal Switch (SW2)	This is the terminal switch for RS-485/CAN communication.
RS-485/CAN port	This is the port for RS-485/CAN communication.

Product Lineup

The product has twenty-four models.

Model	Jetson Module	LTE	Storage
DX-U2100-2M0623	Jetson Orin Nano 4GB	None	256GB
DX-U2100-2M0723			512GB
DX-U2100-2M0823			1TB
DX-U2100-4G2M0623		4G LTE CAT4	256GB
DX-U2100-4G2M0723			512GB
DX-U2100-4G2M0823			1TB
DX-U2100-3M0623	Jetson Orin Nano 8GB	None	256GB
DX-U2100-3M0723			512GB
DX-U2100-3M0823			1TB
DX-U2100-4G3M0623		4G LTE CAT4	256GB
DX-U2100-4G3M0723			512GB
DX-U2100-4G3M0823			1TB
DX-U2200-3M0623	Jetson Orin NX 8GB	None	256GB
DX-U2200-3M0723			512GB
DX-U2200-3M0823			1TB
DX-U2200-4G3M0623		4G LTE CAT4	256GB
DX-U2200-4G3M0723			512GB
DX-U2200-4G3M0823			1TB
DX-U2200-4M0623	Jetson Orin NX 16GB	None	256GB
DX-U2200-4M0723			512GB
DX-U2200-4M0823			1TB
DX-U2200-4G4M0623		4G LTE CAT4	256GB
DX-U2200-4G4M0723			512GB
DX-U2200-4G4M0823			1TB