BOX Computer
BX-U310 Series

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

This product is a fan-less computer for embedded applications with an Intel Atom processor x6413E (1.5GHz). The product delivers both an ultra-compact design and performance in a wide temperature range (−10°C to +60°C with an airflow of 0.7 m/s).

Addition to HDMI, a wide variety of interfaces including USB3.2 Gen2 (USB3.1) x 2 and LAN x 2 are provided.

Embedded-type CPU has been adopted. The use of readily available parts ensures the product to be applied easily. In addition, CONTEC-customized BIOS allows support to be provided at the BIOS level.

* 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 July, 2025.

Features

Palm-sized ultra-compact PC
At just 110 (W) × 80 (D) × 45 (H) mm, this ultra-compact PC is small enough to fit in the palm of your hand. This product assists customers in miniaturizing their equipment without compromising design.

Operation capable in a wide temperature range between -10 and + 60°C
Achieves stable operation in a wide temperature range of -10 to +60°C *1

"Power failure protection system" features power-off without OS shutdown
Equipped with the "Power failure protection system" function that protects data and prohibits writing to storage in the event of power failure.*2 Along with the lockdown (disk writing suppression) function of Windows IoT Enterprise, power can be safely turned off without a shutdown process. Moreover, file system damage or data damage caused by sudden power failure can be avoided.

High-security design contributes to a highly reliable system
The latest security functions such as TPM2.0 and Secure Boot, as well as CONTEC's original functions including the USB Boot Protect are provided. This product is designed with the high security required for industrial applications in mind.

CONTEC-customized BIOS provides useful utility
Useful utility of BIOS *3 customized by CONTEC is provided.

The "Disk Copy" function provides secure disk backup at the BIOS level, and also supports backup in file format or compressed file format. We also offer the CONTEC tools "BIOS update tool" for updating BIOS.*4

Helps reduce running costs and energy consumption
This product uses the x6413E low power consumption Intel Atom processor platform to achieve low power consumption while still providing sufficient performance.

Fan-less design reduces maintenance work
The product is fan-less to ensure a totally spindle-less design that simplifies maintenance, relieving the concern about dust or foreign matter to get into the product. Moreover, along with minimized use of degrading parts greatly reduce maintenance work.

*1 Derating conditions exist.
*2 The Power Failure Protection system function is only supported by models equipped with M.2 SSD.
*3 For details, see each setting in the [BIOS Setup] section.
*4 Contact your retailer for more information.

Specifications

Function specification

Item		Description
CPU		Intel Atom® x6413E Processor 1.5GHz
BIOS		BIOS (mfd. by AMI)
Memory		8GB (LPDDR4, PC4-25600), non-ECC, On Board
Graphics Controller		Intel® UHD Graphics (CPU integrated)
System Resolution	HDMI	800 x 600, 1,024 x 768, 1,152 x 864, 1,280 x 600, 1,280 x 720, 1,280 x 768, 1,280 x 800, 1,280 x 960, 1,280 x 1,024, 1,360 x 768, 1,366 x 768, 1,400 x 1,050, 1,440 x 900, 1,600 x 900, 1,600 x 1,200, 1,680 x 1,050, 1,792 x 1,344, 1,856 x 1,392, 1,920 x 1,080, 1,920 x 1,200, 1,920 x 1,440, 1,920 x 2,160, 2,048 x 1,152, 2,048 x 1,280, 2,048 x 1,536, 2,560 x 1,440, 2,560 x 1,600, 2,560 x 1,920, 2,560 x 2,048, 3,840 x 2,160 (16,770,000 colors)
Storage	eMMC	64GB (TLC, eMMC 5.1), On Board *1
	M.2 SSD	BX-U310-J27xx : Not equipped BX-U310-J28xx : 128GB(TLC, SATAIII) *1
LAN		Realtek® RTL8111H controller
		1000BASE-T/100BASE-TX/10BASE-T RJ-45 connector (supports Wake On LAN) x 2ports
USB		USB 3.2 Gen2 (USB3.1) compliant 2ports
Wireless LAN *2		IEEE 802.11ax/ac/a/b/g/n
Security (TPM)		TCG TPM2.0
Hardware monitoring		Monitoring CPU temperature, board temperature, and power voltage
Watchdog timer (WDT)		Software programmable, 255 level (1sec - 255sec), Time up allows reset
Real Time Clock		Lithium backup battery life: 10 years or more *3 The real-time clock is accurate within ±3 minutes (at 25°C) per month (CPU integrated RTC).
Power Management		Power management setup via BIOS Wake On LAN Supports ACPI Power management
Interface	Display	HDMI x 1
	M.2 Card Slot *4	1 slot, M.2 2242, Key M (SATAIII) 1 slot, M.2 2230/2280, Key E (PCIe x 1, USB2.0)
	LAN	2-port (RJ-45 connector)
	USB	USB3.2 Gen2 (USB3.1) compliant 2ports (Type-A connector)
Power supply	Rated Voltage Range	12VDC *5
	Input Voltage Range	10.8 - 13.2VDC
	Current Consumption	3.5A (Max.)
	External Device Power Supply Capacity	M.2 slot Key M : +3.3V : 2.5A (2,500mA x1) M.2 slot Key E : +3.3V : 2.0A (2,000mA x1) USB3.2 Gen2 (USB3.1) I/F : +5V : 1.8A (900mA x 2 per port)
Physical dimensions (mm)		110(W) x 80(D) x 45(H) (Not including the attachment fitting or protrusions)
Weight		0.57kg (approx) (Not including the attachment fitting)

*1 The capacity of disk in the OS pre-installed type is a value when 1GB is calculated by 1 billion bytes. The capacity that can be recognized from OS might be displayed fewer than an actual value.

*2   Wireless LAN is only available on wireless models.

*3   It is when the power is disconnected for 16 hours a day.

*4   The product is equipped with M.2 Card slots. Please contact your retailer when considering installation of an M.2 module.

*5   Use a power cable 3 meters or shorter.

Installation Environment Requirements

| Item		Description
Operating temperature *5		-10 - +50°C no airflow -10 - +60°C airflow 0.7m/s
Storage Temperature *5		-10 - +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) *6, Signal Line/±1kV (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 0.375mm, 57 - 150Hz/5.0G 60minutes each in X, Y, and Z directions (JIS C60068-2-6-compliant, IEC60068-2-6-compliant)
Impact resistance		100G half-sine shock for 6ms 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 B, FCC Class B, CE Marking (EMC Directive Class B, RoHS Directive) *7, UKCA *7, TELEC (set with the certified wireless module) *8

*5   Derating may occur depending on the installation orientation and load conditions.
     See the "Installation Requirements" in this manual for details.

*6   It is when the product is used with AC adapter PWA-60AWD1.

*7   The wireless model is excluded from CE Standard and UKCA.

*8   Wireless module are only available on wireless models.

Physical Dimensions

BX-U310-J2xx0

[mm]

BX-U310-J2xx5

[mm]
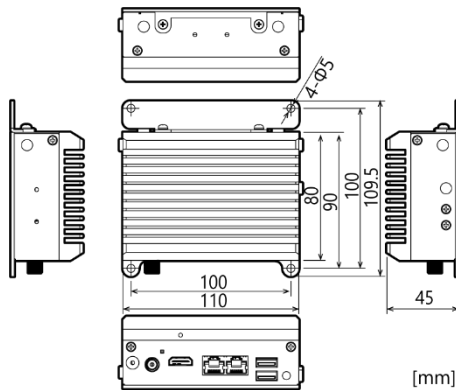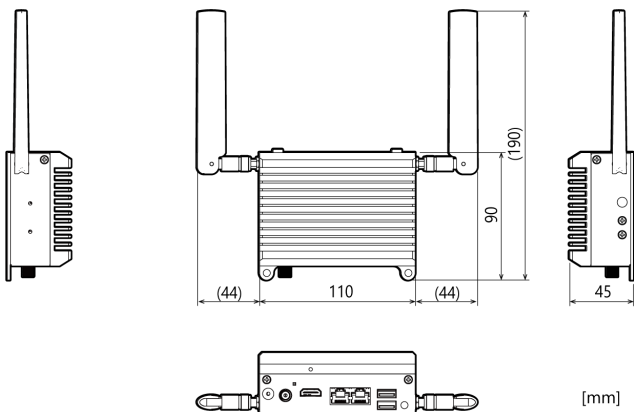
Included Items

Name	BX-U310-J2xx0 [Without Wireless Model] Pcs.	BX-U310-J2xx5 [Wireless Model] Pcs.
The Main Body	1	1
DIN-Rail Mounting Bracket	1	1
The Attachment Fitting *1	1	1
Washer Assembled Screw (M3 x 6, Black) *1	2	2
Washer Assembled Screw for Attachment (M4 x 10, Black)	4	4
Flat Head Screw (M3 x 5, Black)	2	2
Cable Tie	1	1
Antenna	-	2
Product Guide	1	1

1 Attached to the main unit.

Supported OS

Windows 10 IoT Enterprise 2021 LTSC 64bit (Japanese / English / Chinese / Korean)

Windows 11 IoT Enterprise LTSC 2024 (Japanese / English / Chinese / Korean)

Optional Products

Item	Model	Description
AC adapter	PWA-60AWD1	Switching AC adapter 12VDC 5.0A DC-plug type

Product Lineup

| Model	Memory	Wireless	OS	Storage device
BX-U310-J2700	LPDDR4 8GB	None	None	eMMC 64GB(TLC)
BX-U310-J2705		IEEE 802.11ax/ac/a/b/g/n		
BX-U310-J2720		None	Windows 10 IoT Enterprise 2021 LTSC 64bit (Japanese / English / Chinese / Korean)	
BX-U310-J2725		IEEE 802.11ax/ac/a/b/g/n		
BX-U310-J2730		None	Windows 11 IoT Enterprise LTSC 2024(Japanese / English / Chinese / Korean)	
BX-U310-J2735		IEEE 802.11ax/ac/a/b/g/n		
BX-U310-J2800		None	None	eMMC 64GB(TLC), M.2 SSD 128GB(TLC)
BX-U310-J2805		IEEE 802.11ax/ac/a/b/g/n		
BX-U310-J2820		None	Windows 10 IoT Enterprise 2021 LTSC 64bit (Japanese / English / Chinese / Korean)	
BX-U310-J2825		IEEE 802.11ax/ac/a/b/g/n		
BX-U310-J2830		None	Windows 11 IoT Enterprise LTSC 2024(Japanese / English / Chinese / Korean)	
BX-U310-J2835		IEEE 802.11ax/ac/a/b/g/n		

Component Name

Front
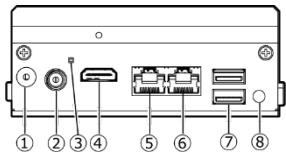
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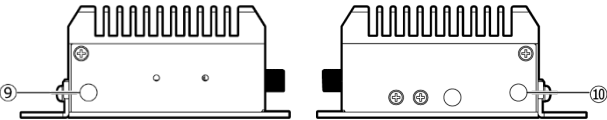
No.	Name	Function
1	FG	Frame Ground
2	DC-IN	DC power connector
3	POWER LED	Power ON display LED
4	HDMI	HDMI (19-pin HDMI Type-A connector)
5	LAN A	Ethernet 1000BASE-T/100BASE-TX/10BASE-T RJ-45 connector
6	LAN B	Ethernet 1000BASE-T/100BASE-TX/10BASE-T RJ-45 connector
7	USB3.2	USB 3.2 Gen2 (USB3.1) port connector x 2
8	POWER SW	PC power switch
9	ANT1	Antenna connector (for wireless LAN) * 1
10	ANT4	Antenna connector (for wireless LAN) * 1

*1 Antenna connectors are available only on the wireless model.