

Embedded PC Supporting A Wide Range of Temperature Environments

# Box Computer BX-830 Series

70°C

-40°C

Railroad



**EN50155**

**A new embedded PC that can be installed anywhere, works in temperatures from -40°C to 70°C!**

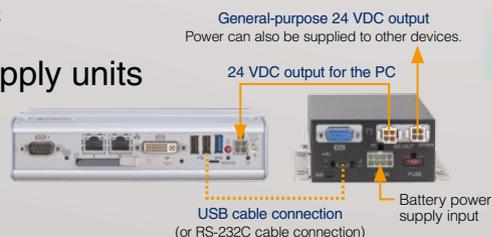
This Windows-compliant and environmentally resistant IoT device platform starts and performs continuous operation in environments having temperatures ranging from -40 to 70°C and has vibration resistance up to 5 G and impact resistance up to 100 G.

This product conforms to the railway standard EN 50155 (Class TX) and provides powerful edge computing not only for moving objects such as railroad vehicles and automobiles but also in harsh environments such as social infrastructure and energy, which were conventionally difficult to address.

- In temperatures from -40°C to 70°C
- Supports to the in-vehicle power supply units

Stable operation in an on-board environment is provided by creating a stable power supply from an unstable car battery power supply.

- Slit-less and fanless design that reduces maintenance and inspection work
- Removal prevention fittings and clamps included to prevent problems caused by cable disconnections
- Equipped with a remote power supply management function



Vehicle





## Specification

Model	BX-830D-DC700000		BX-830D-DC731314	
CPU	Intel® Atom™ Processor E3845 1.91GHz			
BIOS	BIOS (mfd. by AMI)			
Memory	4GB, 204pin SO-DIMM socket x 1, PC3-10600(DDR3L 1333) ECC			
Graphic	Controller	Intel® HD Graphics (built-in CPU)		
	Analog RGB	640x480, 800x600, 1,024x768, 1,152x864, 1,280x600, 1,280x720, 1,280x768, 1,280x800, 1,280x960, 1,280x1,024, 1,360x768, 1,366x768, 1,400x1,050, 1,440x900, 1,600x900, 1,680x1,050, 1,920x1,080, 1,920x1,200 (16,770,000 colors, ReduceBlanking)		
	DVI-D	640x480, 800x600, 1,024x768, 1,152x864, 1,280x600, 1,280x720, 1,280x768, 1,280x800, 1,280x960, 1,280x1,024, 1,360x768, 1,366x768, 1,400x1,050, 1,440x900, 1,600x900, 1,680x1,050, 1,920x1,080 (16,770,000 colors, ReduceBlanking)		
	Display Port	640x480, 800x600, 1,024x768, 1,152x864, 1,280x600, 1,280x720, 1,280x768, 1,280x800, 1,280x960, 1,280x1,024, 1,360x768, 1,366x768, 1,400x1,050, 1,440x900, 1,600x900, 1,680x1,050, 1,920x1,080, 1,920x1,200 (16,770,000 colors, ReduceBlanking)		
Storage	CFast card	1 slot, CFast CARD Type I x 1 bootable		
	Display	DVI-I x 1 (29pin DVI-I connector), Display Port x1		
Interface	CFast card slot	None	1 slot, Built-in CFast card slot (SLC) (16GB, 1 partition) *1	
	LAN *2	Intel I210IT Controller, 1000BASE-T/100BASE-TX/10BASE-T 2 port (Wake On LAN support)		
	USB	USB 3.0 compliant 1 port, USB 2.0 compliant 2 port		
	RS-232C	2 port (9pin D-SUB connector [male])		
	RS-422/485 (general-purpose)	1 port (15pin D-SUB connector [female])		
	Power supply	Rated input voltage	12 to 24VDC *3	
Range of input voltage		10.8 to 33.6VDC		
Power consumption		12V 2.2A, 24V 1.2A		
External device power supply capacity		CFast card slot: 3.3V: 0.5A(500mAx1), USB3.0 I/F: +5V: 0.9A (900mAx1), USB2.0 I/F: +5V: 1A (500mAx2)		
Operating temperature *4	-40 to 70°C (When using 1000BASE-T: -40 to 65°C), during forced air cooling (0.5m/s), -40 to 60°C (When using 1000BASE-T: -40 to 55°C), during natural air cooling / -40 to 80°C / 10 to 90%RH (No condensation)			
Floating dust particles / Corrosive gases	Not to be excessive / None			
Line-noise resistance	Line noise	AC line / ±2kV (IEC61000-4-4 Level 3, EN61000-4-4 Level 3)*5, Signal line / ±1kV (IEC61000-4-4 Level 4, EN61000-4-4 Level 3)		
	Static electricity resistance	Contact discharge / ±4kV (IEC61000-4-2 Level 3, EN61000-4-2 Level 2), Atmospheric discharge / ±8kV (IEC61000-4-2 Level 3, EN61000-4-2 Level 3)		
Vibration resistance	Sweep resistance	10 to 57Hz/semi-amplitude 0.375 mm 57 - 500Hz/5.0G, 60 min. each in x, y, and z directions (JIS C60068-2-6-compliant, IEC60068-2-6-compliant)		
Impact resistance	100G, half-sine shock for 6 ms in x, y, and z directions (JIS C60068-2-27-compliant, IEC60068-2-27-compliant)			
Grounding	Class D grounding, SG-FG / continuity			
Physical dimensions(mm)	182 (W) x 115.5(D) x 49.8(H) (No protrusions)			
Weight	About 1.3kg (Excluding attachment fittings)			
Certification	VCCI ClassA, FCC ClassA, CE (EMC Directive ClassA), EN45545-2, EN50155 (Class TX) *6*7			
Supported OS	None	Windows Embedded Standard 7 32bit (Japanese, English, Chinese, Korean)		

\*1: The capacity of CFast 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: If you use the 1000BASE-T, be careful of the operating temperature.

\*3: Use a power cable shorter than 3m.

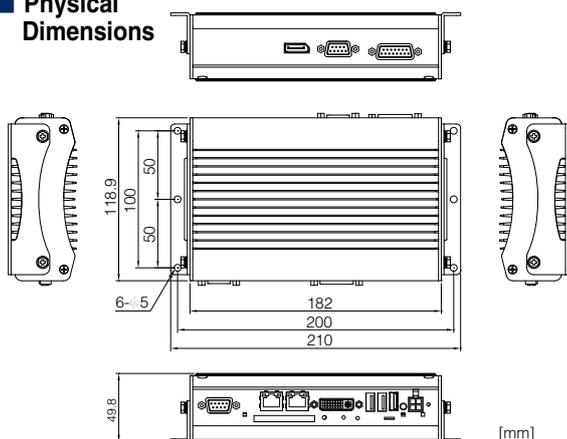
\*4: For more details on this, please refer to chapter 3, "Installation Requirements".

\*5: When AC adapter "ACAP19-01" is used.

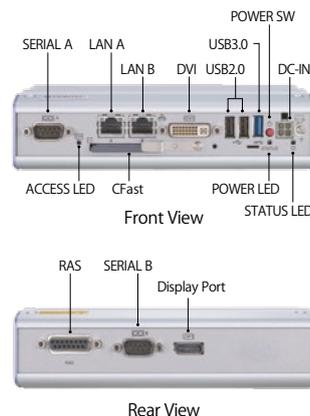
\*6: Use a USB 2.0 I/F cable shorter than 3m.

\*7: The noise resistance test, withstand voltage test, and insulation resistance test were performed with the optional AC adapter ACAP19-01 connected. Only the BX-830D conforms to this standard. Prepare a power supply that conforms to EN 50155.

## Physical Dimensions



## Component Name



POWER LED	Power ON display LED
STATUS LED	Status LED
ACCESS LED	CFast disk access display LED
DC-IN	DC power input connector
POWER-SW	Power switch
MIC IN	Mic in (φ3.5 PHONE JACK)
LINE OUT	Line out (φ3.5 PHONE JACK)
DVI-I	Display (29 pin, female)
Display Port	Display (20 pin, female)
USB3.0	USB3.0 port TYPE-A connector x 1
USB2.0	USB2.0 port TYPE-A connector x 2
LAN A	Ethernet 1000BASE-T/100BASE-TX/10BASE-T RJ-45 connector
LAN B	Ethernet 1000BASE-T/100BASE-TX/10BASE-T RJ-45 connector
CFast1	CFast card slot (SATA connection)
SERIAL A	Serial port 1 connector (9pin D-SUB, male)
SERIAL B	Serial port 2 connector (9pin D-SUB, male)
RAS	RAS function and RS-422/485 connector (15 pinD-SUB, female)

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