Fanless, Ultra Low Voltage Celeron M 1.0GHz
Box-PC 700 series

IPC-BX700-AC Series

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

Model	Expansion Slot	OS
IPC-BX700-AC400	—	
IPC-BX700P2-AC400	Shared PCI/ISA slot x 2	—
IPC-BX700P4-AC400	Shared PCI/ISA slot x 2, PCI slot x 2	

This product is an IBM PC/AT compatible, box computer designed for industrial use based on a low-power-consumption CPU of the Ultra Low Voltage Intel(R) Celeron(R) M Processor 1.0GHz (FSB400MHz), to operate as a completely nature-cooled (fanless) system.   The box computer provides a variety of interfaces including the USB2.0, 100BASE-TX, and RS-232C ports, capable of serving for a wide range of applications as a compact platform based on a general-purpose PC OS.   As this series incorporates handpicked components such as the embedded types of CPU and chipset, it excels in environmental resistance and remains in stable supply for an extended period of time.   You can therefore use the box computer under severe operating conditions such as FA with ease.

Base Model
    IPC-BX700-AC

Model with Expansion Slot
    IPC-BX700P2-AC   (Expansion 2 Slot type)
    IPC-BX700P4-AC   (Expansion 4 Slot type)

Features

Equipped with the Ultra Low Voltage Intel(R) Celeron(R) M Processor 1.0GHz (FSB400MHz) CPU and memory conforming 512MB as standard

Fan-less operation achieved by natural air-cooling

High reliability and completely silent running (when fitted with the silicon disk from CONTEC)

Long, reliable supply (The CPU and chip set are embedded versions.)

Adoption of BIOS (Award, Ltd.) customized by CONTEC to support the BIOS level

Equipped with the CF card slot (Type I, bootable), Audio (AC97 conforming), 100BASE-TX, Serial (RS-232C) x 4, I/F such as USB2.0 x 6 as a standard

Equipped with a secondary-IDE connector to allow an optional external CD-ROM/DVD-ROM drive to be connected

Capable of starting up, even with the battery dead, using CMOS data retained by EEPROM

Extension interfaces all located on the front face   Slot-in system facilitating the mounting and demounting of storage devices

AC power cable with stopper clamp and CF card slot with retaining bracket

Installation-compatible with conventional products in the IPC-BX630/620/600 series

Support Software

Windows XP Professional

Windows XP Embedded

Specification

Functional Specifications

Model		IPC-BX700-AC	IPC-BX700P2-AC	IPC-BX700P4-AC
CPU		Ultra Low Voltage Intel(R) Celeron(R)M Processor 1.0GHz, FSB400MHz		
Chip set		Intel(R) 855GME		
Memory	L2 Cache	512KB		
	Main memory	512 MB (2.5V 184pin DDR SDRAM PC2700 DIMM Socket x 1)		
	BIOS ROM	128KB E0000H - FFFFFH (Award)		
Video	Controller	Intel 855GME (Built into the controller)		
	Video RAM	Main memory shared		
	Video BIOS	48KB (C0000H - CBFFFF)		
	Display I/F	Analog RGB I/F x 1 (15pin HD-SUB connector x 1)		
System resolution		640 x 480 (16,770,000 colors), 800 x 600 (16,770,000 colors), 1,024 x 768 (16,770,000 colors), 1,280 x 1,024 (16,770,000 colors), 1,600 x 1,200 (16,770,000 colors)		
Audio		AC97 compliant		
	Line IN :	ϕ3.5 Stereo mini jack Full-scale input level 1.6Vrms (Typ.)		
	LINE OUT :	ϕ3.5 Stereo mini jack Full-scale output level 1.5Vrms (Typ.), Dual 50mW Amplifier		
	MIKE IN :	ϕ3.5 mono mini jack Full-scale input level 1.6Vrms (Typ.)		
IDE HDD I/F	Primary	Ultra DMA/100 2.5 inch IDE HDD or silicon disk drive: 1 internal unit (Primary IDE Master)		
	Secondary	Equipped with a dedicated 40pin, header connector (for connection of an optional CD-ROM/DVD-ROM) (right surface)		
CF card slot		CF CARD Type I x 1 (dedicated to memory card, Secondary IDE Slave) bootable		
Serial I/F		RS-232C (general-purpose) : 4ch (SERIAL PORT1, 2, 3, 4) 9pin D-SUB connector Baud rate : SERIAL1, 2 is 50 -115,200bps and SERIAL3, 4 is 50 -230,400bps		
LAN	I/F	100BASE-TX/10BASE-T RJ-45 connector		
	Controller	Intel(R) ICH4 integrated		
USB I/F		6ch (USB 2.0 specification)		
Keyboard/mouse I/F		PS/2 type (6 pin mini-DIN connector), (bundled with keyboard / mouse distribution cable)		
General-purpose I/O		-		
Watch dog timer		Software programmable, 255 level (1sec - 255 sec) Causes a reset upon time-out.		
Expansion board slot		None	Shared PCI/ISA slot x 2, Installable board length: 240mm (Max.)	Shared PCI/ISA slot x 2, PCI slot x 2 Installable board length: 240mm (Max.)
RTC/CMOS		Lithium backup battery life: 10 years or more The real-time clock is accurate within ±3 minutes (at 25°C) per month (ICH4 integrated RTC).		
Power supply	Input supply voltage	Automatically switched between 85 - 132 VAC and 170 - 265 VAC (47 - 63 Hz)		
	Current consumption	50VA (Max.)	90VA (Max.)	115VA (Max.)
	Expansion board power-supply capacity	None	+5V : 2A (1A x 2 slot), -5V : Not supplied, -12V : 80mA, +12V : 0.5A	+5V : 4A (1A x 4 slot), -5V : Not supplied, -12V : 80mA, +12V : 0.5A
	External device power supply capacity	- Power connector for S-IDE *1 (S-IDE PWR) +5V : 1.0A *2, +12V : 1.0A - CF card slot +5V : 500mA *2 - USB I/F +5V : 3A (500mA x 6) *2	- Power connector for S-IDE *1 (S-IDE PWR) +5V : 1.0A *2, +12V : 1.0A - CF card slot +5V : 500mA *2 - USB I/F +5V : 3A (500mA x 6) *2 - Expansion board slot +5V : 2A (1A x 2 slot) *2, +3.3V : 1A (total 2 slot), -5V : Not supplied, -12V : 80mA, +12V : 0.5A	- Power connector for S-IDE *1 (S-IDE PWR) +5V: 1.0A *2, +12V: 1.0A - CF card slot +5V: 500mA *2 - USB I/F +5V: 3A (500mA x 6) *2 - Expansion board slot +5V: 4A (1A x 4 slot) *2, +3.3V : 1A (total 4 slot), -5V : Not supplied, -12V : 80mA, +12V : 0.5A
Physical dimensions (mm)		262(W) x 262(D) x 55(H) (No protrusions)	262(W) x 262(D) x 115(H) (No protrusions)	262(W) x 262(D) x 160(H) (No protrusions)
Weight		About 3.3kg (Storage device isn't included)	About 4.0kg (Storage device isn't included)	About 4.6kg (Storage device isn't included)

*1   Please do not connect it excluding the CD-ROM/DVD-ROM drive.
*2   The total capacity for power supply to external devices at +5 V must fall within 4 A.

*   The PCI bus slots are 32-bit type, not verified for operation of boards for both 32-bit and 64-bit bus slots.

Installation Environment Requirements

Parameter			Requirement description
Power supply specifications	Allowable instantaneous power outage		Less than 20ms
			One minute each for AC2.0kV (input - FG) 20mA
	Dielectric strength		50MΩ (500VDC)
Ambient specifications	Operating temperature		0 - 50°C (SDD in use *1), 5 - 45°C (HDD in use)
	Storage temperature		-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, Signal line/±1kV (IEC61000-4-4Level 3, EN61000-4-4 Level 3)
		Static electricity resistance	Contact discharge/±4kV (IEC61000-4-2 Level 2, EN61000-4-2 Level 2) Atmospheric discharge/±8kV (IEC61000-4-2 Level 3, EN61000-4-2 Level 3)
	Vibration resistance *2	Sweep resistance	10 - 57Hz/semi-amplitude 0.15mm 57 - 150Hz/2.0G 40 min. each in x, y, and z directions (JIS C0040-compliant, IEC68-2-6-compliant)
	Impact resistance *2		10G, half-sine shock for 11 ms in x, y, and z directions (JIS C0041-compliant, IEC68-2-27-compliant)
	Grounding		Class D grounding (previous class 3 grounding)

*1 When Windows OS operates.
*2 When the HDD is not in use.

Options

Silicon disk drive for extension (IDE 2.5inch)
[PCI Board Type] For IPC-BX700P2-ACxxx, IPC-BX700P4-ACxxx
PC-RSD1000-PCI : 1GB silicon disk drive
PC-RSD2000-PCI : 2GB silicon disk drive
PC-RSD4000-PCI : 4GB silicon disk drive
PC-RSD8000-PCI : 8GB silicon disk drive

Hard disk drive (IDE 2.5inch)
PC-HDD40G : 40GB hard disk drive

Silicon disk drive (IDE 2.5inch)
PC-ESD500 : 512MB silicon disk drive
PC-ESD1000 : 1GB silicon disk drive
PC-ESD2000 : 2GB silicon disk drive
PC-ESD4000 : 4GB silicon disk drive
PC-ESD8000 : 8GB silicon disk drive
PC-ESD500-A : 512MB silicon disk drive
PC-ESD1000-A : 1GB silicon disk drive
PC-ESD2000-A : 2GB silicon disk drive
PC-ESD4000-A : 4GB silicon disk drive
PC-ESD8000-A : 8GB silicon disk drive

CF Card
CF-1GB-R : 1GB CompactFlash for Fix Disk
CF-2GB-R : 2GB CompactFlash for Fix Disk
CF-4GB-R : 4GB CompactFlash for Fix Disk
CF-8GB-R : 8GB CompactFlash for Fix Disk
CF-1GB-A : 1GB CompactFlash for Fix Disk
CF-2GB-A : 2GB CompactFlash for Fix Disk
CF-4GB-A : 4GB CompactFlash for Fix Disk
CF-8GB-A : 8GB CompactFlash for Fix Disk

TFT color liquid-crystal display
<Analog RGB types>
FPD-H21XT-AC (15 inch 1024 x 768 dots, Panel mounted type)
FPD-L21ST-AC (12.1 inch 800 x 600 dots, Panel mounted type)
FPD-M21VT-AC (10.4 inch 640 x 480 dots, Panel mounted type)

* Check the CONTEC's Web site for the latest information on these options.

Packing List

Name	Pcs.	Name	Pcs.
BOX-PC	1	Secondary IDE Flat cable	1
The attachment fittings	2	Secondary IDE Power cable	1
CF Card Lock	1	6 pin mini-DIN cable (2 in 1 cable for PS/2 Mouse & Keyboard function)	1
Slot Cover (Only P2 model, P4 model)	2 (4) *1	IPC-SLIB-01 *2 (User's manual, Driver & Utility Soft Set)	1
Cable fixed clamp	4	Recovery Media	1 *5
Power Cable	1	Royalty consent contract	1 *5
Flat head screw (M3 x 5)	4	Setup Procedure Document	1 *5
Three-point sems screw (M3 x 6)	5	IPC Precaution List	1
Three-point sems screw (M4 x 8)	4	Product guide(this sheet)	1
Installation Media	1 *3, *4, *5	Windows XP Embedded Notes	1 *3, *5

*1 The inside of a parenthesis shows IPC-BX700P4-AC model.
*2 Please confirm latest information on the CONTEC homepage though the user's manual is stored in IPC-SLIB-01.
*3 It is not packed to the Windows XP Professional pre-install model.
*4 It is not packed to the Windows XP Embedded pre-install model.
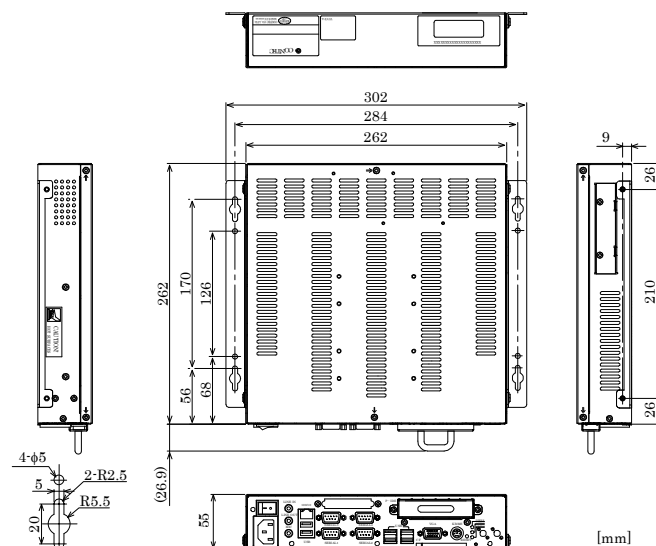*5 It is not packed to the OS uninstall model.

Component Life

(1) Power supply--- Estimated life is about 6 years based on continual operation at 40°C (horizontal installation). However, (higher) operating temperatures will result in shorter life.
(2) Battery--- The internal calendar clock and CMOS RAM are backed by a Lithium primary battery. The backup time at a temperature of 25°C with the power disconnected is 10 years or more.
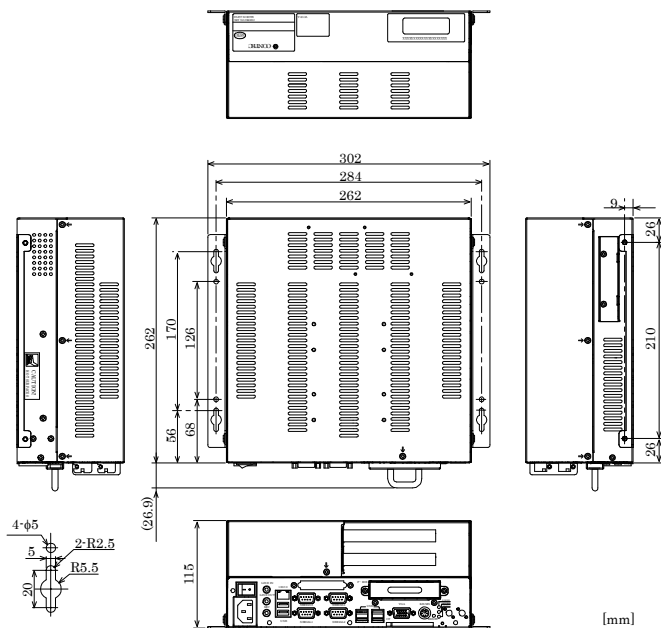
* Replacement of expendables is handled as a repair (there will be a charge).
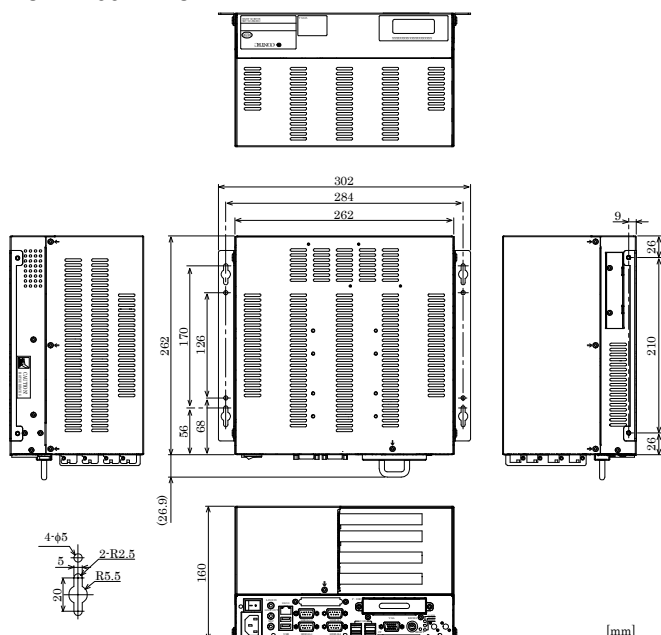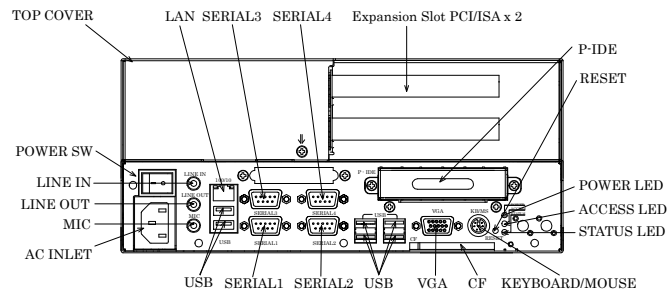
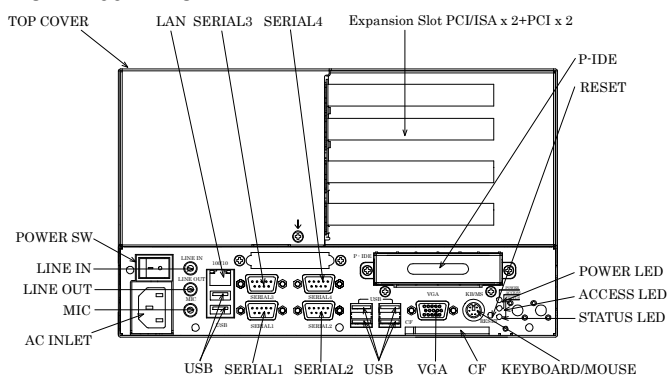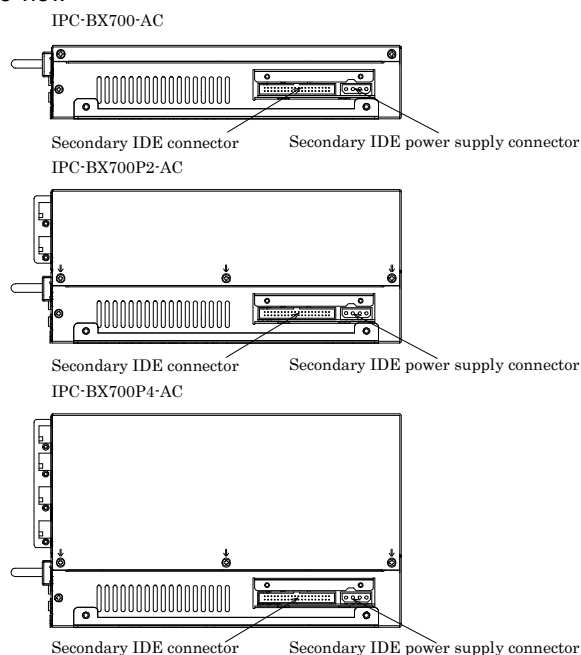## Physical Dimensions

IPC-BX700-AC

[mm]

IPC-BX700P2-AC

IPC-BX700P2-AC

IPC-BX700P4-AC

[mm]

IPC-BX700P4-AC

[mm]

Side view

IPC-BX700-AC

Secondary IDE connector   Secondary IDE power supply connector

IPC-BX700P2-AC

Secondary IDE connector   Secondary IDE power supply connector

IPC-BX700P4-AC

Secondary IDE connector   Secondary IDE power supply connector

Component Locations

IPC-BX700-AC
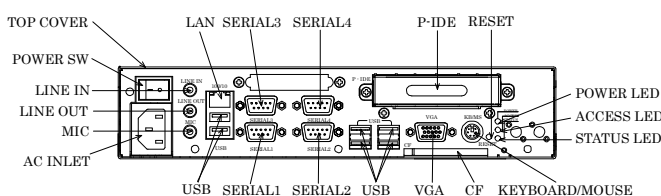
Name	Function
POWER SW	Power switch
AC INLET	AC power input connector
LINE IN	Line in (φ3.5 PHONE JACK)
LINE OUT	Line out (φ3.5 PHONE JACK)
MIC	Mike in (φ3.5 PHONE JACK)
LAN	Ethernet 100BASE-TX/10BASE-T RJ-45 connector
USB	USB port connector x 6
SERIAL1	Serial port 1 connector (9pin D-SUB/male)
SERIAL2	Serial port 2 connector (9pin D-SUB/male)
SERIAL3	Serial port 3 connector (9pin D-SUB/male)
SERIAL4	Serial port 4 connector (9pin D-SUB/male)
VGA	CRT (HD-SUB15pin / female)
KEYBOARD/MOUSE	Keyboard / mouse connector (6pin mini-DIN)
RESET	Hard reset push button
POWER LED	Power ON display LED
ACCESS LED	IDE disk access display LED
STATUS LED	General-purpose LED
P-IDE	Primary IDE connector (dedicated to 44pin socket)
CF	CF card slot (secondary IDE connection)
S-IDE	Secondary IDE connector (2.54mm pitch header)
S-IDE PWR	Secondary IDE power supply connector
Expansion Slot	PCI/ISA x 2 < P2 model >, PCI/ISA x 2+PCI x 2 < P4 model >

Expansion slot
(P2 and P4 models)

When three or more slots are needed, select the P4 model. To use five or more slots or a full-size board, connect the expansion unit.

PC-HELPER
Series

Expansion bus adapter

Expansion chassis

PCI, ISA
Half-size board

IPC-BX700P2-AC

LAN
LINE IN
LINE OUT
MIC
USB x 2   RS-232C x 4   USB x 4

Option CD-ROM/DVD drive

Display

General-purpose analog input display

2.5inch hard (silicon) disk drive

Keyboard/mouse

Expansion Slots (P2 and P4 model)

The P2 model is equipped with two PCI/ISA bus expansion slots capable of accepting either PCI or ISA bus boards.   The P4 model is equipped with two PCI/ISA slots and two PCI slots capable of accepting only PCI bus boards as well.

Board Dimensions Allowed

240mm(Max.)

122mm(Max.)
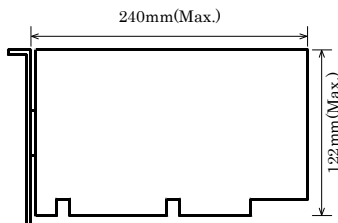
⚠ CAUTION

A board that uses the back of the board edge connector (the shaded area in the figure) may not be mounted.

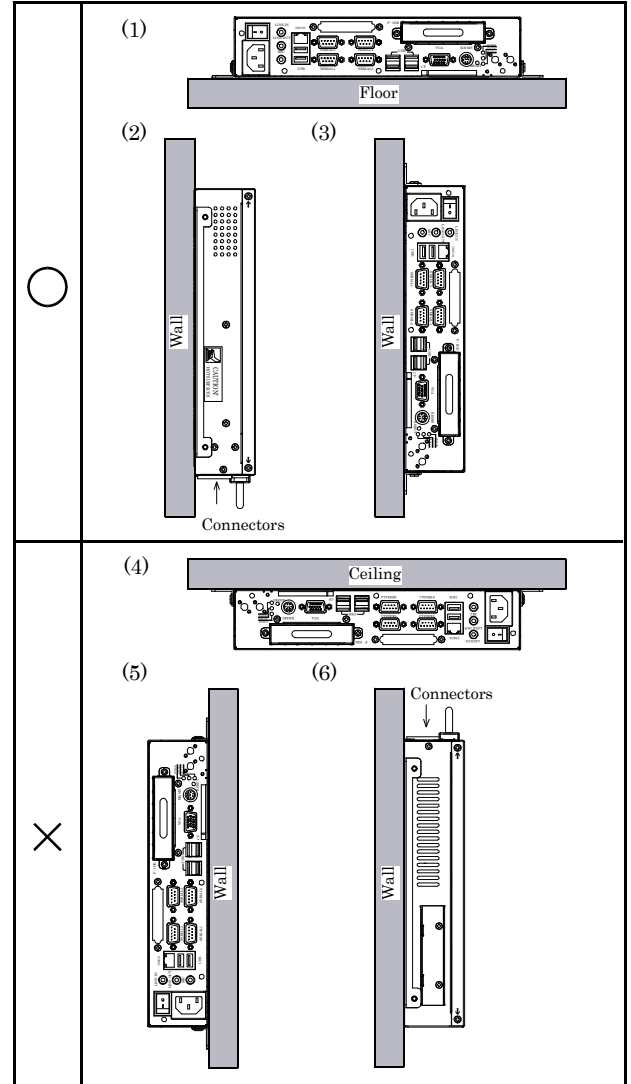The ISA bus slot cannot use the following signals.
-5V, IOCHK, REFRESH, MASTER

The PCI bus slots are 32-bit type.   They have not been verified for operation of 64/32-bit boards such as the ADAPTEC 39160SCSI board or Intel Pro1000/MT network board.

Installation Requirements

The BOX-PC can be installed in any orientation (1) - (3). Avoid orientation (4) - (6) since it might not adequately dissipate heat.   In addition, take appropriate measures so that the ambient temperature falls within the range of installation environment conditions, such as keeping the system unit well-ventilated and sufficiently spaced its surroundings.

Installation Orientation

(1)

Floor

(2)   (3)

Wall   Wall

Connectors

(4)

Ceiling

(5)   (6)

Connectors

Wall   Wall

Distances between the BOX-PC and Its Vicinity

50mm or more (side)   50mm or more (side)

100mm or more (above)

50mm or more (back)

Connectors