PC-HELPER

PCI Bus
Expansion Adapter for PCI Bus PC-Slot
EAD(PCI)BE
PCI Bus
Expansion Adapter for Low Profile PCI PC-Slot
EAD(LPCI)BE
User's Manual
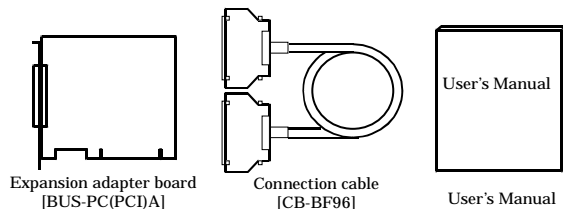
CONTEC CO.,LTD.

Check Your Package

Thank you for purchasing the CONTEC product.

The EAD(PCI)BE and EAD(LPCI)BE are different in items contained.

Check, with the following list, that your package is complete.   If you discover damaged or missing items, contact your retailer.

Product Configuration List < EAD(PCI)BE >

   - Expansion adapter board [BUS-PC(PCI)A] …1
   - Connection cable [CB-BF96] …1
   - This User's Manual (this booklet) …1

Expansion adapter board
[BUS-PC(PCI)A]

Connection cable
[CB-BF96]

User's Manual

Product Configuration List < EAD(LPCI)BE >

   - Expansion adapter board [BUS-PC(LPCI)A] …1
   - Connection cable [CB-CB68/96] …1
   - This User's Manual (this booklet) …1
   - Bracket for PCI …1

Expansion adapter board
[BUS-PC(LPCI)A]

Connection cable
[CB-CB68/96]

User's Manual

Bracket for PCI
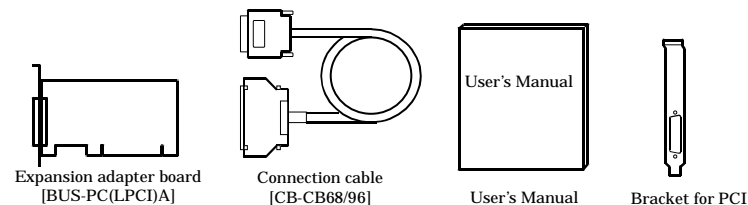
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Table of Contents

1. Before Using the Product

This chapter provides information you should know before using the product.

About the Board

The EAD(PCI)BE or EAD(LPCI)BE is an expansion adapter that connects the optional expansion chassis ECH(PCI)BE to a PC to extend a PCI bus expansion slot in the PC, thereby providing additional PCI bus expansion slots.

Features

- Capable of expand the PCI bus (5V/32-bit, 33 MHz) from a single PCI bus slot in the PC.

- Expansion chassis free of choice according to the number of PCI bus slots and the board size required.

- Power supply controllable in response to the turning on/off of the PC's power supply.

- Supporting both of Low Profile and standard PCI slots (exchangeable with the bundled bracket).
  < EAD(LPCI)BE >

Expansion chassis (Option)

PCI Bus Expansion Chassis

PCI Bus Expansion Chassis (Short x 2Slots)	: ECH(PCI)BE-H2B
PCI Bus Expansion Chassis (Long x 2Slots)	: ECH(PCI)BE-F2B
PCI Bus Expansion Chassis (Short x 4Slots)	: ECH(PCI)BE-H4B
PCI Bus Expansion Chassis (Long x 4Slots)	: ECH(PCI)BE-F4B
PCI Bus Expansion Chassis (Short x 4Slots)	: ECH(PCI)BE-H4A
PCI Bus Expansion Chassis (Short x 7Slots)	: ECH(PCI)BE-H7A
PCI Bus Expansion Chassis (Long x 7Slots)	: ECH(PCI)BE-F7A
PCI Bus Expansion Chassis (Short x 13Slots)	: ECH(PCI)BE-H13A
PCI Bus Expansion Chassis (Long x 13Slots)	: ECH(PCI)BE-F13A

Check the CONTEC's Web site for more information on these expansion chassis.

Combinations of Expansion Adapters and Expansion Chassis

The expansion adapters and expansion chassis can be used in the following combinations:

Expansion adapter	Expansion chassis ECH(PCI)BE								
	-H2B	-F2B	-H4B	-F4B	-H4A	-H7A	-F7A	-H13A	-F13A
EAD(CB)BE	O	O	O	O	O	×	×	×	×
EAD(PCI)BE	O	O	O	O	O	O	O	O	O
EAD(LPCI)BE	O	O	O	O	O	O	O	O	O
EAD-BE-LPE	O	O	O	O	O	O	O	O	O

Expansion chassis

ECH(PCI)BE-H2B   ECH(PCI)BE-F2B   ECH(PCI)BE-H4B   ECH(PCI)BE-F4B

ECH(PCI)BE-H4A   ECH(PCI)BE-H7A   ECH(PCI)BE-F7A

ECH(PCI)BE-H13A   ECH(PCI)BE-F13A

Expansion adapter

EAD(CB)BE   EAD(PCI)BE   EAD(LPCI)BE   EAD-BE-LPE

Restrictions

EAD(PCI)BE, EAD(LPCI)BE has restrictions on the types of PCs and boards that can be used.
Be sure to check the following restrictions before use.

< Restrictions of PC>

- EAD(PCI)BE, EAD(LPCI)BE use the PCI-to-PCI Bridge to extend the bus.
  The PCI boards plugged in PCI slots in the EAD(PCI)BE, EAD(LPCI)BE are recognized if the
  PCI-to-PCI bridge is recognized by the BIOS in the PC used. Ask the PC vendor for whether the
  BIOS recognizes the PCI-to-PCI bridge.

< Restrictions on transfer rate >

When the expansion chassis accommodates a board that performs high-speed transfer such as bus
mastering, the overall transfer rate may be lower than that of PCI bus slots in the main unit of a desktop
PC.
This is caused by bus extension by the PCI-to-PCI Bridge.
The transfer rate may vary with the system configuration and the type of the PC.

< Restrictions of PCI board>

None of the following types of boards can be used in any expansion slot in the expansion chassis.

- Video display board (VGA board)
- Board to connect a PCI bus expansion chassis
- Board explicitly stated not to be used with the PCI-to-PCI Bridge
- Some boards, even PCI-compliant ones, may not work depending on their specifications

Customer Support

CONTEC provides the following support services for you to use CONTEC products more efficiently and comfortably.

Web Site

Japanese	http://www.contec.co.jp/
English	http://www.contec.com/
Chinese	http://www.contec.com.cn/

Latest product information

CONTEC provides up-to-date information on products.

CONTEC also provides product manuals and various technical documents in the PDF.

Free download

You can download updated driver software and differential files as well as sample programs available in several languages.

Note! For product information

Contact your retailer if you have any technical question about a CONTEC product or need its price, delivery time, or estimate information.

Limited Three-Years Warranty

CONTEC products are warranted by CONTEC CO., LTD. to be free from defects in material and workmanship for up to three years from the date of purchase by the original purchaser.
Repair will be free of charge only when this device is returned freight prepaid with a copy of the original invoice and a Return Merchandise Authorization to the distributor or the CONTEC group office, from which it was purchased.
This warranty is not applicable for scratches or normal wear, but only for the electronic circuitry and original products. The warranty is not applicable if the device has been tampered with or damaged through abuse, mistreatment, neglect, or unreasonable use, or if the original invoice is not included, in which case repairs will be considered beyond the warranty policy.

How to Obtain Service

For replacement or repair, return the device freight prepaid, with a copy of the original invoice. Please obtain a Return Merchandise Authorization number (RMA) from the CONTEC group office where you purchased before returning any product.

*   No product will be accepted by CONTEC group without the RMA number.

Liability

The obligation of the warrantor is solely to repair or replace the product. In no event will the warrantor be liable for any incidental or consequential damages due to such defect or consequences that arise from Safety Precautions.
Understand the following definitions and precautions to use the product safely.

Safety Precautions

Understand the following definitions and precautions to use the product safely.

Safety Information

This document provides safety information using the following symbols to prevent accidents resulting in injury or death and the destruction of equipment and resources. Understand the meanings of these labels to operate the equipment safely.

⚠ DANGER	DANGER indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.
⚠ WARNING	WARNING indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.
⚠ CAUTION	CAUTION indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury or in property damage.

Handling Precautions

⚠ DANGER

Do not use the product where it is exposed to flammable or corrosive gas. Doing so may result in an explosion, fire, electric shock, or failure.

⚠ CAUTION

- The Board must be plugged into an expansion slot conforming to the PCI Bus Standard on a PC.

- Do not impact or bend the board.
  Doing so may result in a malfunction, overheating, fault, or damage.

- Do not plug or unplug any board into or from the expansion slot with the PC or
  expansion chassis powered. Doing so may result in a malfunction, overheating, fault, or damage.
  Be sure to turn off the PC or expansion chassis and unplug their power cables before plugging or
  unplugging any expansion board.

- Do not plug or unplug the cable interconnecting the PC and expansion chassis with the PC or
  expansion chassis powered.

- Do not connect any signal other than specified to the on-board connector.
  Doing so may result in a malfunction, overheating, fault, or damage.

- If a specific expansion slot is recommended for a board, plug the board into that slot.
  Doing so may result in a malfunction, overheating, fault, or damage.

- When plugging or unplugging the power cable, be sure to hold it by the plug itself.

- Do not use or store the board where it is exposed to any chemical either directly or as vapor in the air.

- The specifications of this product are subject to change without notice for enhancement or quality
  improvement.
  Even when using the product continuously, be sure to read the manual and understand the contents.

- Do not modify this product.
  CONTEC will bear no responsibility for any problems, etc., resulting from modifying the product.

- Regardless of the foregoing statements, CONTEC is not liable for any damages whatsoever
  (including damages for loss of business profits) arising out of the use of or inability to use this
  CONTEC product or the information contained herein.

Environment

Use this product in the following environment. If used in an unauthorized environment, the board may overheat, malfunction, or cause a failure.

Operating temperature

0 - 50°C

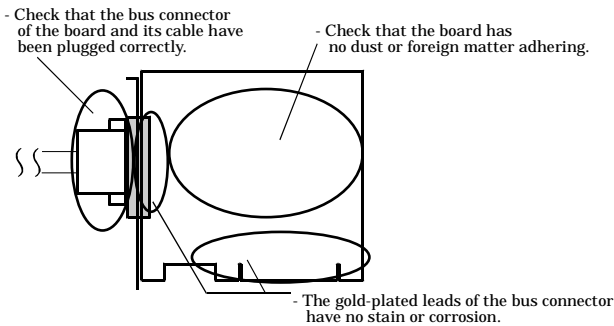Humidity

10 - 90%RH (No condensation)

Corrosive gases

None

Floating dust particles

Not to be excessive

Inspection

Inspect the product periodically as follows to use it safely.

- Check that the bus connector of the board and its cable have been plugged correctly.

- Check that the board has no dust or foreign matter adhering.

- The gold-plated leads of the bus connector have no stain or corrosion.

The photo is of the BUS-PC(PCI)A but the check points are the same as with the BUS-PC(LPCI)A.

Storage

When storing this product, keep it in its original packing form.

(1) Put the board in the storage bag.

(2) Wrap it in the packing material, then put it in the box.

(3) Store the package at room temperature at a place free from direct sunlight, moisture, shock, vibration, magnetism, and static electricity.

2. Setup

This chapter explains how to set up the board.

Refer to the user's manual for the expansion chassis as required.

What is Setup?

Setup means a series of steps to take before the product can be used.

Taking the following steps in this chapter sets up the EAD(PCI)BE, EAD(LPCI)BE.

Step 1 Preparation

Step 2 Installing the Expansion Board
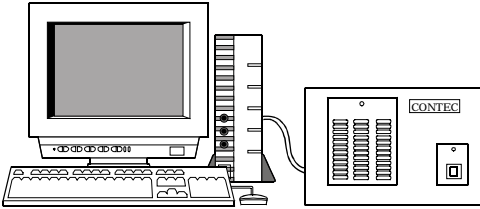
Step 3 Connecting the Cable

Step 4 Installing the expansion adapter board

Step 5 Setup and Check

If setup fails to be performed correctly, refer to "Setup Troubleshooting".

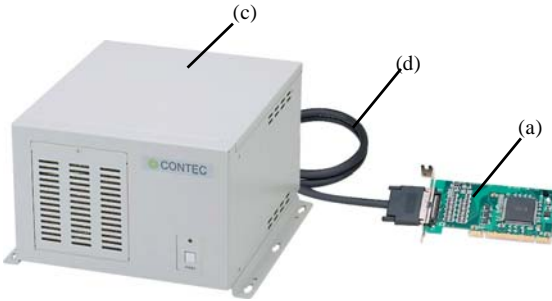# Step 1 Preparation

Configuration image

The photo is of the EAD(PCI)BE+ECH(PCI)BE-H4A.

Figure 2.1.   Configuration image

Items to be prepared

- PC

- Expansion adapter

  Expansion adapter board [BUS-PC(PCI)A or BUS-PC(LPCI)A] …(a),
  Connection Cable [CB-BF96 or CB/CB68/96] …(b)

- Expansion chassis

  Chassis…(c), Power cable

- PCI board to be installed

The photo is of the EAD(LPCI)BE+ECH(PCI)BE-H4A but the check points are the same as with the
ECH(PCI)BE-H2B/F2B/H4B/F4B/H7A/F7A/H13A/F13A.
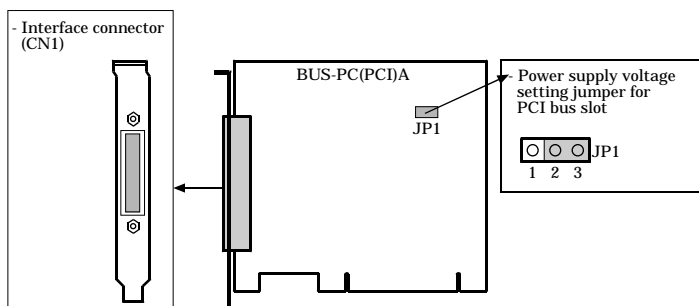
Names of major parts

BUS-PC(PCI)A

Figure 2.2. Names of major parts < BUS-PC(PCI)A >
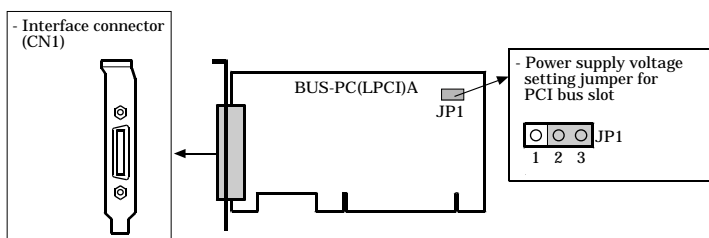
BUS-PC(LPCI)A

Figure 2.3. Names of major parts < BUS-PC(LPCI)A >

Step 2 Installing the Expansion Board

Refer to the user's manual for the expansion chassis to install the expansion board on the expansion chassis.

Step 3 Connecting the Cable

Connecting the connection cable to the BUS-PC(PCI)A

Connect the connection cable [CB-BF96] to the expansion adapter board [BUS-PC(PCI)A] as shown in Figure 2.4 below.

⚠ CAUTION ⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯

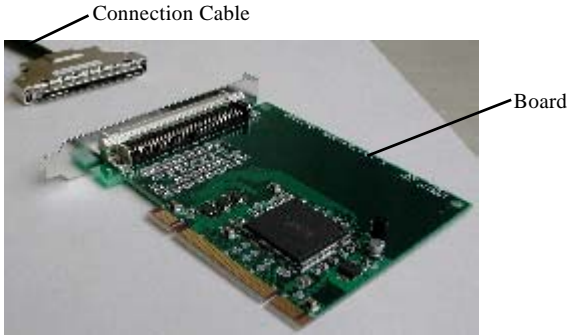Do not plug or unplug them with the PC powered.

Figure 2.4.   Connecting the connection cable to the BUS-PC(PCI)A

Connecting the connection cable to the BUS-PC(LPCI)A

Connect the connection cable [CB-CB68/96] to the expansion adapter board [BUS-PC(LPCI)A] as shown in Figure 2.5 below.

⚠ CAUTION ⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯

Do not plug or unplug them with the PC powered.
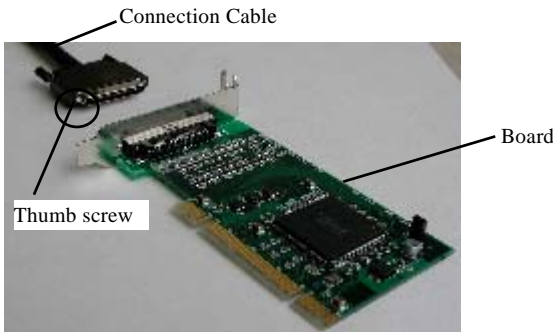

Figure 2.5.   Connecting the connection cable to the BUS-PC(LPCI)A

Connecting the connection cable to the Expansion Chassis

Refer to the user's manual for the expansion chassis to connect its connection cable to the expansion chassis.

Plugging the Power Cable

(1) Plug the power cable into the expansion chassis.
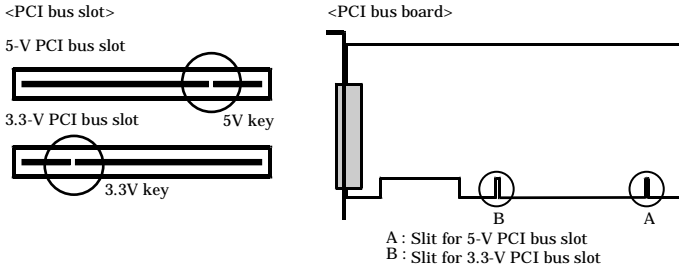
Step 4 Installing the expansion adapter board

(1) Before plugging the board, shut down the system, unplug the power cable of your PC from a wall outlet.

(2) Remove the cover from the PC so that the board can be mounted.

(3) Plug the board into an expansion slot.

(4) Attach the board bracket to the PC with a screw.

(5) Put the cover back into place.

The photo is of the BUS-PC(PCI)A but the check points are the same as with the BUS-PC(LPCI)A.

Applicable PCI bus slots

PCI bus slots used in PCs have keys to prevent 5V and 3.3V PCI bus boards from being accidentally plugged into wrong bus slots. This board can be plugged into both of the 5V and 3.3V PCI bus slots.

<PCI bus slot>   <PCI bus board>

5-V PCI bus slot

3.3-V PCI bus slot   5V key

3.3V key

B   A

A : Slit for 5-V PCI bus slot
B : Slit for 3.3-V PCI bus slot

⚠ CAUTION

- Do not touch the board's metal plated terminals (edge connector) with your hands.
  Otherwise, the board may malfunction, overheat, or cause a failure.
  If the terminals are touched by someone's hands, clean the terminals with industrial alcohol.

- Do not install or remove the board to or from the expansion slot with the PC or expansion chassis powered.
  Otherwise, the board may malfunction, overheat, or cause a failure.
  Be sure to turn off the PC.

- Make sure that your PC or expansion chassis can supply ample power to all the boards installed.
  Insufficiently energized boards could malfunction, overheat, or cause a failure.

Power supply voltage for PCI bus slot

Some PCI bus slots in your PC may supply power only at 3.3V but not at 5V. In that case, the expansion adapter does not work with its factor settings.

Move the JP1's jumper plug from the 2-3 position to the 1-2 position.

For power supply at 5V	For power supply not at 5V
⊙ ⊙ ⊙ JP1 1 2 3 (Factory setting)	⊙ ⊙ ⊙ JP1 1 2 3
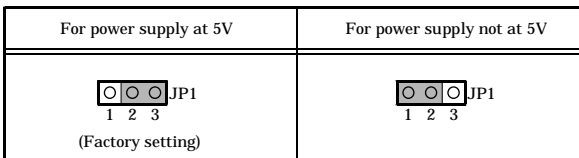
Figure 2.6. Power supply voltage setting for PCI bus slot

Step 5 Setup and Check

Starting the system

The expansion chassis is turned on and off in sync with the PC's power supply.

Turning on the system

(1) Plug the power plug of the expansion chassis into a wall outlet.
    You do not need to press the POWER switch on the front panel (*1).

(2) The power supply of a PC is turned ON.

(3) The expansion chassis is turned on in synchronization with the PC's power supply.

(4) Make sure that the POWER LED on the expansion chassis is on.

Turning off the system

(1) The power supply of a PC is turned OFF.

(2) The expansion chassis is turned off in synchronization with the PC's power supply.

*1 Pressing the POWER switch on the front panel of the expansion chassis turns on the
    expansion chassis or puts it to sleep.
    Use the switch, for example, to turn on only the expansion chassis.

⚠ CAUTION ————————————————————————————

Do not turn on or off the expansion chassis with the PC main unit powered.
Doing so cancels the detection of the bus adapter. When turning the expansion chassis on back,
restart the PC main unit.

Setting up the hardware in Windows

At startup of Windows, the expansion adapter and the PCI-to-PCI Bridge used by the expansion chassis are detected in sequence and identified automatically by the Windows standard driver.

After that, the PCI boards installed on the expansion chassis are detected in sequence.

For setting up and checking the boards used on the expansion chassis, refer to their respective manuals.

Checking the hardware in Windows

You can use Device Manager to check whether the expansion adapter and expansion chassis has been identified in Windows. Device Manager shows "PCI standard PCI-to-PCI bridge" and "Intel 21152 PCI to PCI bridge" under "System devices".

The expansion adapter and expansion chassis in use can be identified with the number of "PCI standard PCI-to-PCI bridge" and "Intel 21152 PCI to PCI bridge" entries.

Two entries: ECH(PCI)BE-H2B/F2B/H4B/F4B/H4A
Three entries: ECH(PCI)BE-H7A/F7A
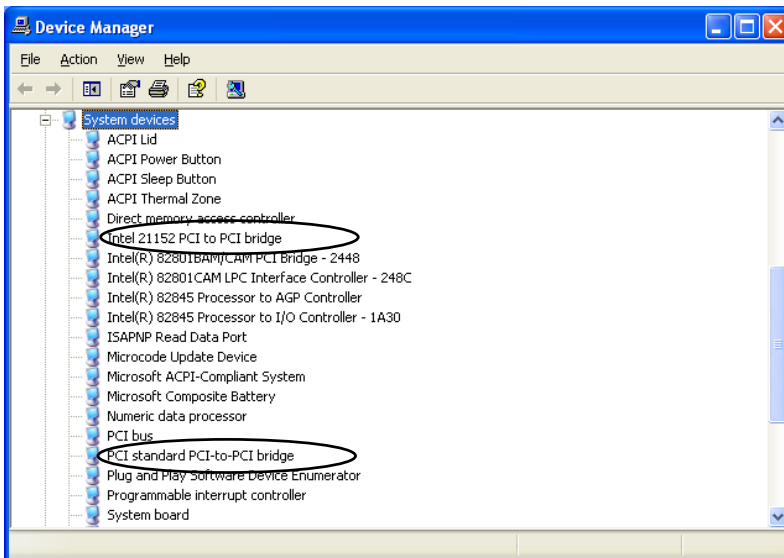Five entries: ECH(PCI)BE-H13A/F13A

Figure 2.7.   Sample screen shot of Device Manager

⚠ CAUTION
    The expansion adapter EAD(PCI)BE, EAD(LPCI)BE does not depend on the OS in use.

Setup Troubleshooting

Please confirm followings when EAD(PCI)BE, EAD(LPCI)BE does not work.

Symptoms and Actions

The chassis won't be turned on.

a. Make sure that the power cable has been connected correctly.

b. Make sure that the power supplies of the PC and expansion chassis are on.

c. Make sure that you have followed the procedure in Chapter 2.

d. Even though the chassis is still not turned on, check whether it is turned on with no board installed. If the chassis is turned on with no board installed, check the total current consumption by the installed boards. The total current consumption must not exceed the power capacity of the expansion chassis.

No PCI board on the expansion chassis is detected.

e. Make sure that the expansion adapter board [BUS-PC(PCI)A or BUS-PC(LPCI)A] has been installed correctly.

f. Make sure that the JP1 jumper on the expansion adapter board [BUS-PC(PCI)A or BUS-PC(LPCI)A] in the PC has been set correctly.

g. Make sure that the connection cable [CB-BF96 or CB-CB68/96] has been installed correctly. When connecting the connection cable to the main chassis, insert the connector until it clicks into place.

h. Make sure that the POWER LED on the expansion chassis is turned on.

The photo is of the EAD(LPCI)BE+ECH(PCI)BE-H4A but the check points are the same as with the ECH(PCI)BE-H2B/F2B/H4B/F4B/H7A/F7A/H13A/F13A.

3. About Hardware

Hardware specification

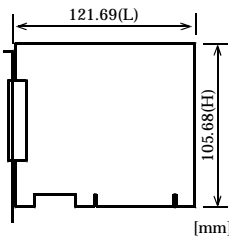## BUS-PC(PCI)A

Table 3.1. Specification < BUS-PC(PCI)A >

Item	Specification
Compatible bus	PCI Local Bus Specification Rev2.3 (+5V/+3.3V type)
Outside dimensions (mm)	121.69(L) x 105.68(H)
Power consumption (Max.)	3.3VDC 200mA *1 (JP1 pins 1 and 2 connected) 5VDC 200mA *1 (JP1 pins 2 and 3 connected)
Usable condition	0 - 50°C, 10 - 90%RH (No condensation)
Weight	50g

*1: Power is supplied from the PC's main unit.

Table 3.2. Specification of CB-BF96

Item	Specification
Bundled connection cable	CB-BF96 (Cable length 1m)

Outside dimensions

[mm]
The standard outside dimension (L) is
the distance from the end of the board
to the outer surface of the slot cover.

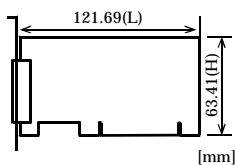# BUS-PC(LPCI)A

Table 3.3. Specification < BUS-PC(LPCI)A >

Item	Specification
Compatible bus	PCI Local Bus Specification Rev2.3 (+5V/+3.3V type)
Outside dimensions (mm)	121.69(L) x 63.41(H)
Power consumption (Max.)	3.3VDC 200mA *1 (JP1 pins 1 and 2 connected) 5VDC 200mA *1 (JP1 pins 2 and 3 connected)
Usable condition	0 - 50°C, 10 - 90%RH (No condensation)
Weight	50g

*1: Power is supplied from the PC's main unit.

Table 3.4. Specification of CB-CB68/96

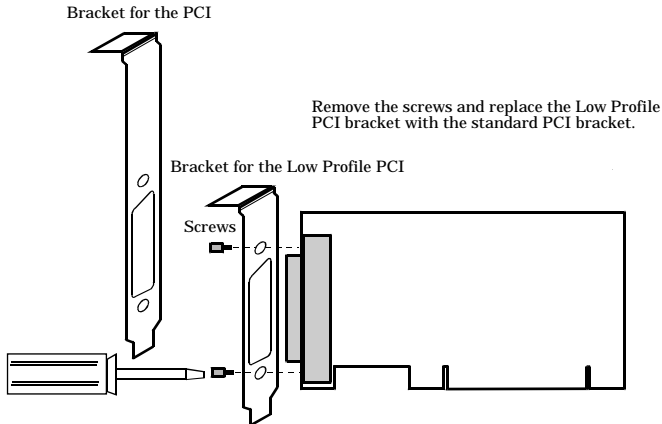| Item	Specification
Bundled connection cable	CB-CB68/96 (Cable length 1m)

Outside dimensions

[mm]
The standard outside dimension (L) is
the distance from the end of the board
to the outer surface of the slot cover.

Restrictions and Notes

Replacing the Bracket

The BUS-PC(LPCI)A is shipped with a Low Profile PCI bracket mounted. To plug it into a standard PCI bus slot, replace the bracket with the bundled PCI bracket as illustrated below.

Bracket for the PCI

Remove the screws and replace the Low Profile
PCI bracket with the standard PCI bracket.

Bracket for the Low Profile PCI

Screws

Use a standard screwdriver to attach and detach the screws.

Figure 3.1. Replacing the Bracket

EAD(PCI)BE
EAD(LPCI)BE
User's Manual