

PC-HELPER

PCI Bus Expansion Adapter
for CardBus PC-Slot

EAD(CB)SF

User's Manual

CONTEC CO.,LTD.

Check Your Package

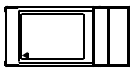
Thank you for purchasing the CONTEC product.

The product consists of the items listed below.

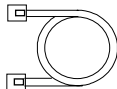
Check, with the following list, that your package is complete. If you discover damaged or missing items, contact your retailer.

Product Configuration List

- PC Card
[BUS-PC(CB)SF] ...1
- Connection cable
[STP-category, 5e straight cables (12m)] ...2
- User's Manual (this booklet) ...1
- CD-ROM
[Drivers Software for EAD(CB) Series] ...1



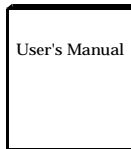
PC Card



Connection cable



CD-ROM
[Drivers Software for
EAD(CB)Series]



User's Manual

Copyright

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1. Before Using the Product

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

About the adapter

The EAD(CB)SF is an expansion adapter that connects the optional expansion chassis [ECH(PCI)SF] to a PC to extend a CardBus compliant PC Card slot in the PC, thereby providing additional PCI bus slots. The expansion adapter can connect the expansion chassis to the PC over a distance of up to 12m.

EAD(CB)SF operates under Windows XP, Windows 2000.

Features

- Using high-speed serial transfer (2.5 Gbps), capable of extending the PCI bus to up to 12m.
- Using a, noise-immune, STP-category, 5e cable easy to wire and install.
- Capable of expand the PCI buses (5V/32-bit, 33 MHz) from a notebook computer.
- 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.

Expansion chassis (Option)

PCI Bus Expansion Chassis

PCI Bus Expansion Chassis (Short x 2Slots)	:	ECH(PCI)SF-H2B
PCI Bus Expansion Chassis (Long x 2Slots)	:	ECH(PCI)SF-F2B
PCI Bus Expansion Chassis (Short x 4Slots)	:	ECH(PCI)SF-H4B
PCI Bus Expansion Chassis (Long x 4Slots)	:	ECH(PCI)SF-F4B
PCI Bus Expansion Chassis (Short x 4Slots)	:	ECH(PCI)SF-H4A

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

Connection cable (Option)

Connection cables (12-meter, STP-category, 5e straight cables) are bundled with this product. The following options can also be available:

- UTP-category, 5e straight cables (3m): TP-03 *1*2
- UTP-category, 5e straight cables (5m): TP-05 *1*2
- UTP-category, 5e straight cables (10m): TP-10 *1*2

*1: A pair of cables are required for connection.

*2: When used in an environment susceptible to extraneous noise, UTP cables may cause link connection. It is advisable to use STP cables available on the market.

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)SF								
	-H2B	-F2B	-H4B	-F4B	-H4A	-H7A	-F7A	-H13A	-F13A
EAD(CB)SF	O	O	O	O	O	x	x	x	x
EAD(LPCI)SF	O	O	O	O	O	O	O	O	O

Expansion chassis



ECH(PCI)SF-H2B



ECH(PCI)SF-F2B



ECH(PCI)SF-H4B



ECH(PCI)SF-F4B



ECH(PCI)SF-H4A



ECH(PCI)SF-H7A



ECH(PCI)SF-F7A



ECH(PCI)SF-H13A



ECH(PCI)SF-F13A

Expansion adapter



EAD(LPCI)SF



EAD(CB)SF

Restrictions

EAD(CB)SF 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 >

- Your PC must have a PC Card slot conforming to the CardBus PC Card Standard on a PC.
- EAD(CB)SF uses the switch fabric to extend the bus.
The expansion adapter does not work normally if the BIOS and CardBus controller on your PC do not detect the switch fabric device as the PCI-to-PCI Bridge.
- Check the CONTEC's Web site for more information on the certified PCs and supported OSs.

< 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 connected to the EAD(CB)SF.

- Video display board (VGA board)
- Board that must boot from within the expansion chassis
- 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

< Restrictions of OS >

The EAD(CB)SF has the following restrictions when used in the Windows XP or Windows 2000 environment.

Available I/O address range : Within 768 Bytes

Available memory address range : Within 1 MByte

The available I/O address and memory address ranges may be different depending on each PC environment.

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 inexperienced usage, misuse, or malfunction of this device.

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 PC Card [BUS-PC(CB)SF] must be plugged into a PC Card slot conforming to the CardBus PC Card Standard on a PC.
 - Do not impact or bend the PC Card [BUS-PC(CB)SF].
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.
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 any PC Card [BUS-PC(CB)SF] into or from the Card slot with the PC or expansion chassis powered.
 - Do not plug or unplug the cable interconnecting the PC Card [BUS-PC(CB)SF] and the expansion chassis with the PC or expansion chassis powered.
 - 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

20 - 90%RH (No condensation)

Corrosive gases

None

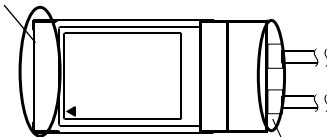
Floating dust particles

Not to be excessive

Inspection

Inspect the product periodically as follows to use it safely.

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



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

Storage

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

- (1) Put the PC Card 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.

Disposal

When disposing of the product, follow the disposal procedures stipulated under the relevant laws and municipal ordinances.

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(CB)SF.

Step 1 Preparation

Step 2 Installing the Expansion Board

Step 3 Connecting the Cable

Step 4 Plugging the PC Card

Step 5 Setup and Check

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

Step 1 Preparation

Configuration image

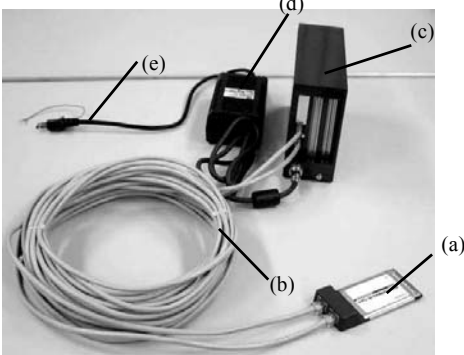


The photo is of the EAD(CB)SF+ECH(PCI)SF-H2B.

Figure 2.1. Configuration image

Items to be prepared

- PC
- Expansion adapter (This product)
(The expansion adapter consists of a PC card to be plugged on a PC and connection cables. A CD-ROM is bundled with the product.)
PC card to be plugged on a PC [BUS-PC(CB)SF] ... (a),
Connection Cable ... (b)
(The connection cables can be substituted for by UTP- or STP-category 5e straight cables of up to 12m in length.)
CD-ROM [DriversSoftware for EAD(CB) Series]
- Expansion chassis
One of the chassis ... (c) , AC adapter ... (d),
Power cable ... (e)
- PCI board to be installed



The photo is of the EAD(CB)SF-ECH(PCI)SF-H2B.

CAUTION

When used in an environment susceptible to extraneous noise, UTP cables may cause link connection. It is advisable to use STP cables available on the market.

Getting ready with your PC

The PC Card [BUS-PC(CB)SF] is conforming to the CardBus PC Card Standard. Make sure that your PC has a TYPE II PC Card slot conforming to the CardBus PC Card Standard.

Names of major parts

BUS-PC(CB)SF

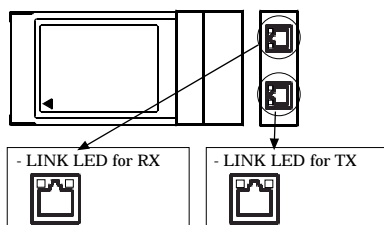


Figure 2.2. Names of major parts < BUS-PC(CB)SF >

LINK LED

The LINK LEDs show whether the switch fabric device is working normally.

Both of the TX and RX LEDs remain on when the device is working normally. If they are blinking or off, see "Setup Troubleshooting."

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 PC Card

Connect the RJ-45 connector of connection cable to the PC Card [BUS-PC(CB)SF]. Connect them together with the connector's flat side and PC Card's front surface face up as shown in Figure 2.3 below.

Make sure that the connection cable connectors are locked.

CAUTION

- When connecting the connection cable with the PC Card, align their mating connectors and plug them straight into each other. Applying excessive force to the cable-side connector of the PC Card may break or make it loose.
 - Do not plug or unplug connector with the PC powered. Doing so may result in a malfunction
 - When used in an environment susceptible to extraneous noise, UTP cables may cause link connection. It is advisable to use STP cables available on the market.
 - The PC may malfunction if link disconnection occurs with the LINK LED blinking or off.
-

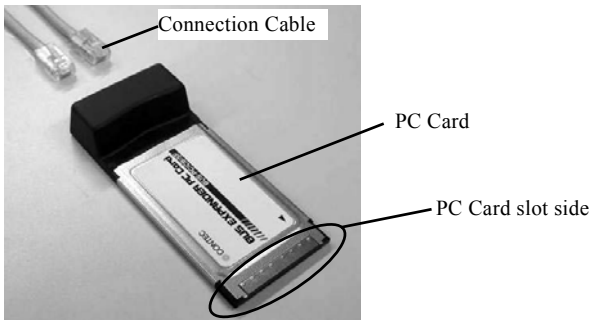


Figure 2.3. Connecting the connection cable to the PC Card

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.

Connect the ECH(PCI)SF-H4A to the expansion adapter EAD(CB)SF installed on the PC as shown below.

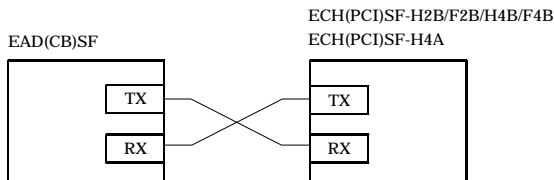


Figure 2.4. Connecting the expansion bus adapter

LINK LED

The LINK LEDs show whether the switch fabric device is working normally.

Both of the TX and RX LEDs remain on when the device is working normally. If they are blinking or off, see "Setup Troubleshooting."



CAUTION

The PC may malfunction if link disconnection occurs with the LINK LED blinking or off.

Plugging the Power Cable

(1) Connect the power cable to the expansion chassis.



CAUTION

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.

Be sure to turn off the PC or expansion chassis and unplug their power cables before plugging or unplugging any expansion board.

Step 4 Plugging the PC Card

Make sure that the PC is off and that the AC adapter is already connected, then plug the PC Card [BUS-PC(CB)SF] into the PC Card slot in the PC.

Check the direction of the arrow mark ▼ on the PC Card and fit it well into the PC Card slot as shown in Figure 2.5.

Although the PC Card has an accidental insertion preventive groove, inserting the PC Card forcibly can break the slot and the Card. Note also that the PC Card slot on some PCs requires that the PC Card be inserted with the front side face down. Make sure before inserting the PC Card.

For notes on unplugging the PC Card, refer to the manual for your PC.

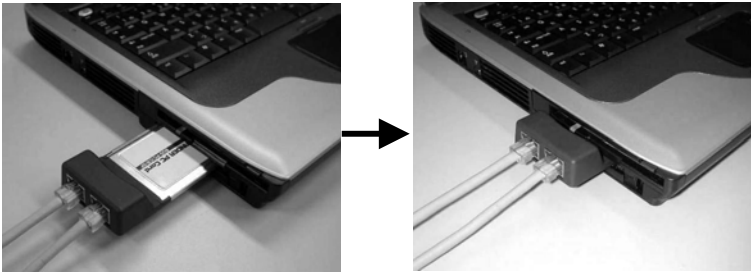


Figure 2.5. Plugging the PC Card

CAUTION

Take the following precautions not to break the PC Card or not to cause its connector to break or come loose.

- Do not insert the PC Card in reverse or by a procedure other than specified.
 - Do not insert the PC card while holding the connection cable or its connector.
 - Do not move the PC with the connection cable connector plugged.
 - Do not apply excessive force to the connector of the PC Card, for example, by forcing the connection cable connector off the PC Card.
 - Do not place anything on the connection cable connector.
-

Notes on use of two or more PC Cards

If your PC has a stack of two TYPE II PC Card slots, two [BUS-PC(CB)SF] PC Cards cannot be used simultaneously in both slots. This is due to the shape of [BUS-PC(CB)SF].

The PC Card [BUS-PC(CB)SF] can be used along with another PC Card which does not use any external connector, such as a memory card.

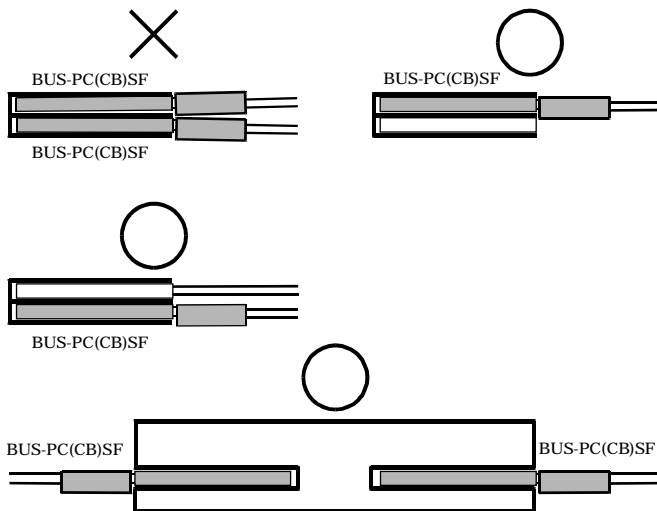


Figure 2.6. Notes on use of two or more PC Cards [BUS-PC(CB)SF]

Step 5 Setup and Check

Starting the system

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

When the PC detects the PC Card [BUS-PC(CB)SF], the expansion chassis is turned on.

Turning on the system

- (1) Plug the power code 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) When the PC Card is detected by the OS, the expansion chassis is turned on.
- (4) Make sure that the POWER LED on the expansion chassis and the LINK LED on the RJ-45 connector 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.
 - Do not plug or unplug the PC card with the PC main unit powered.
 - 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.
Be sure to turn off the PC or expansion chassis and unplug their power cables before plugging or unplugging any expansion board.
 - If you turn on the PC after turning it off, keep a time interval of at least 10 seconds in between. If the power OFF-to-ON interval is too short, the expansion chassis may fail to be turned on.
-

For use under Windows XP, Windows 2000

Setting up the hardware

The switch fabric devices used for the expansion adapter and expansion chassis are detected as a PCI-to-PCI Bridge and another PCI Bridge device in sequence upon startup of Windows.

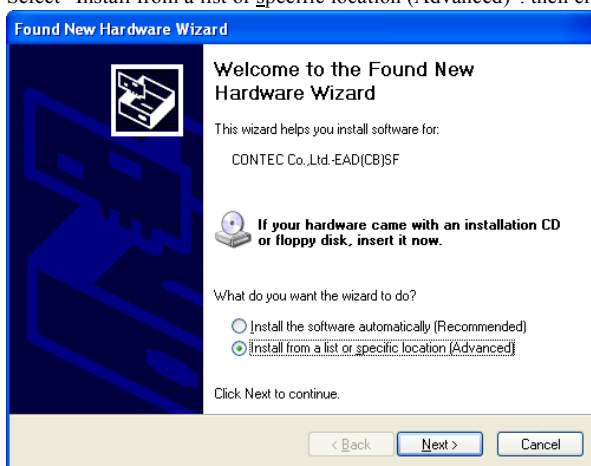
For use under Windows XP or Windows 2000, the dedicated driver software must be installed.

Refer to Readmej.html on the bundled CD-ROM as well.

Setup the “Add New Hardware Wizard”

- (1) The “Add New Hardware Wizard” will be started.

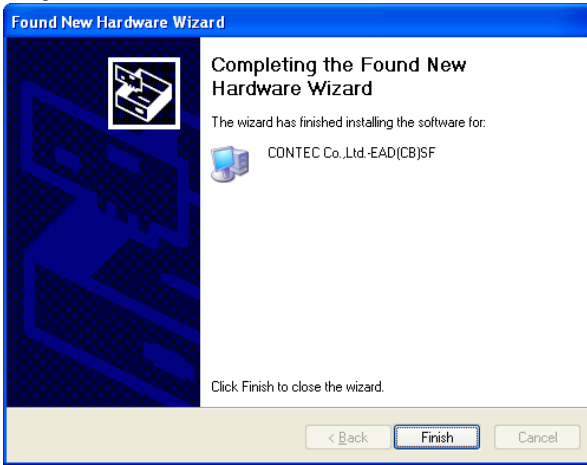
Select “Install from a list or specific location (Advanced)”, then click on the [Next] button.



- (2) Select the Inf folder in the bundled CD-ROM and then click on the “OK” button.



- (3) Complete the “Found New Hardware Wizard”.



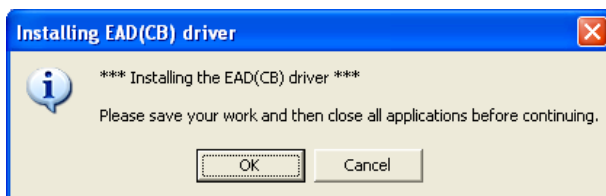
Installation

Follow the procedure below to install the driver.

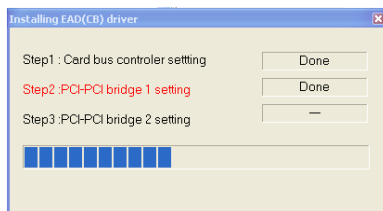
The system must be restarted twice before the installation process can be completed. Close running applications before installation.

To install the driver, you must have administrator privileges.

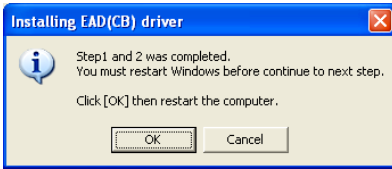
- (1) Make sure that the PC Card and expansion chassis have been connected correctly, the PCI board to be used has been installed on the expansion chassis correctly, and that the expansion chassis power cable has been plugged into a wall outlet.
- (2) Shut down Windows, insert the PC Card into the CardBus slot, then start Windows. Although Windows will prompt you to restart the system, do not restart it.
- (3) Load the bundled CD-ROM on the CD-ROM driver. Invoke Explorer and run the installer CCBSETUP.EXE.
- (4) Follow the on-screen instructions to proceed to install the driver.
You need to restart the system later, prompted by the installed.



Press [OK] to proceed.



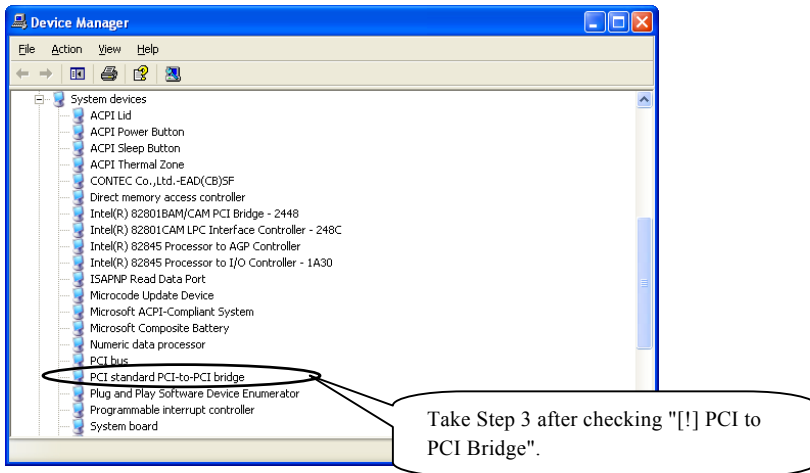
Setup in process.



Press [OK] to restart Windows.



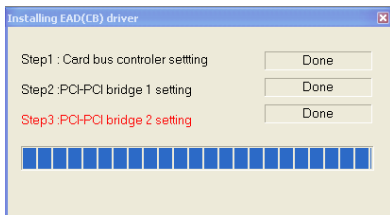
The above dialog box appears when Windows has been started. Check Device Manager to make sure that the PCI-to-PCI bridge has been detected, then click on [OK] to proceed.



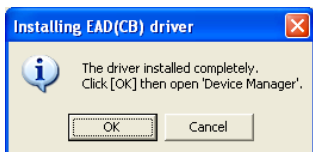
- * You need to take Step 3 after a new PCI-to-PCI bridge has been detected by the OS. Press [OK] after the PCI-to-PCI bridge is displayed in the system tray or Device Manager. If you press [OK] before it is displayed, Step 3 will be executed after restart.



Press [OK] to restart Windows.



Setup in process.



Pressing [OK] invokes Device Manager.

- (5) When the PC Card and expansion chassis has been detected normally, PCI boards are detected next. 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

You can use Device Manager to check whether the expansion chassis has been identified in Windows. Device Manager shows “PCI standard PCI-to-PCI bridge” under “System devices”.

Make sure that two entries of “PCI standard PCI-to-PCI bridge” are listed.

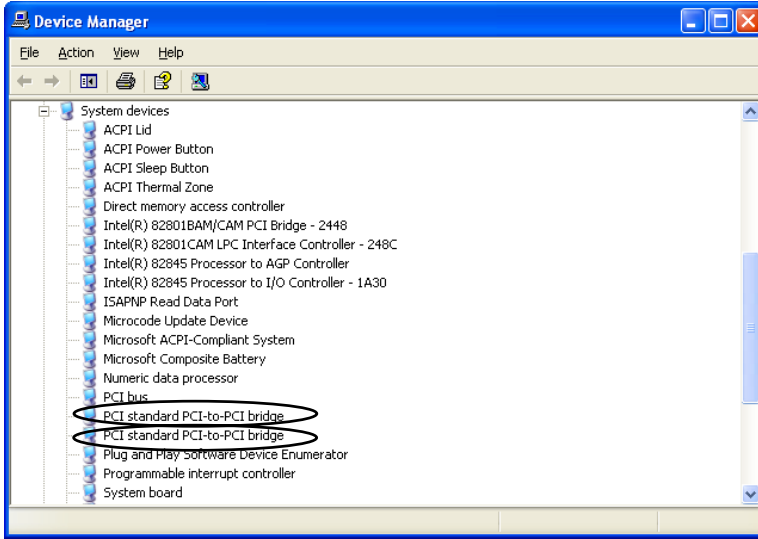


Figure 2.7. Sample screen shot of Device Manager

Setting Utility

The EAD(CB) Driver setting utility (\WIN2000\CCBUTIL.EXE) is a utility that changes settings for the EAD(CB) driver in the Windows XP or Windows 2000 environment. Use this utility when the CardBus controller, PCI-to-PCI bridge, and PCI boards are not identified correctly with the driver's default parameters set at installation.

- Function overview

The EAD(CB) driver is the utility to adjust the sizes of the I/O address and memory address windows set by Windows for the CardBus controller and PCI-to-PCI bridge.

- Note on using this utility

When the CardBus controller or PCI-to-PCI bridge is marked with an exclamation mark due to a code-12 error in Device Manager or causes the blue screen of death upon startup of Windows, usually, the I/O address window range may be inappropriate. This utility allows you to change the operation parameters for the EAD(CB) device driver. The changes made to parameter settings take effect the next time Windows is restarted.

In most cases, you can work around the problem by lowering the I/O address window range from a default of 768 to 512 or to 256.

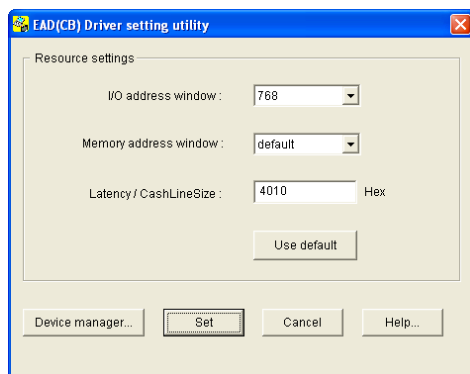


Figure 2.8. Example of driver setting utility dialog box

Uninstalling the driver

To uninstall the EAD(CB) driver, use “Add/Remove Programs” in the Control Panel.

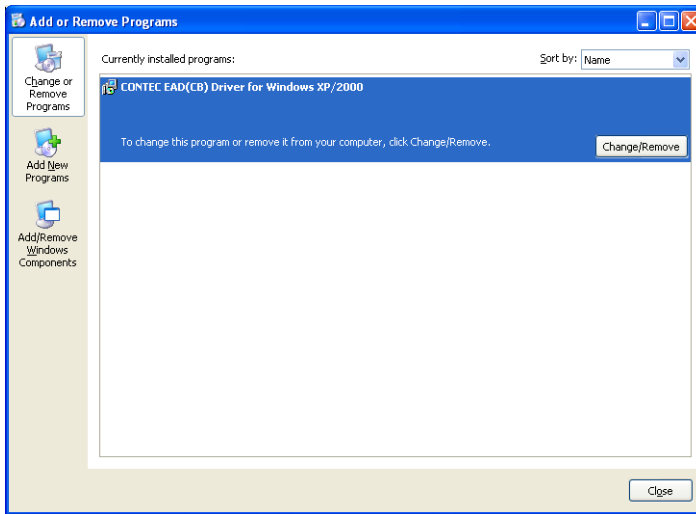


Figure 2.9. Prompt to uninstall

Setup Troubleshooting

Please confirm followings when EAD(CB)SF does not work.

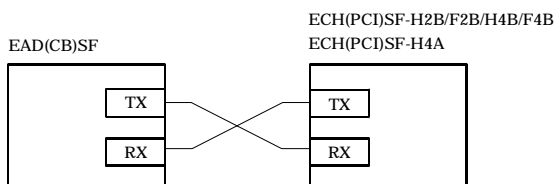
Symptoms and Actions

The chassis won't be turned on.

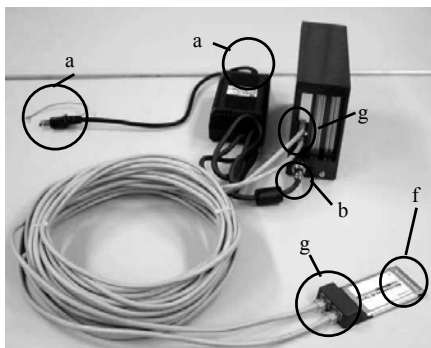
- Make sure that the power cable has been connected correctly.
- Make sure that the AC adapter has been connected correctly.
- Make sure that the power supplies of the PC and expansion chassis are on.
- Make sure that you have followed the procedure in Chapter 2.
- Even though the chassis is still not 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.

- Make sure that the PC Card [BUS-PC(CB)SF] has been installed correctly.
- Make sure that the connection cable has been installed correctly.
When connecting the connection cable to the main chassis, insert the connector until it clicks into place.



- Make sure that the POWER LED on the expansion chassis is turned on.
- Make sure that the LED (LINK) built in the RJ-45 connector is on.
When used in an environment susceptible to extraneous noise, UTP cables may cause link connection. It is advisable to use STP cables available on the market.



The photo is of the EAD(CB)SF+ECH(PCI)SF-H2B but the check points are the same as with the ECH(PCI)SF-F2B/H4B/F4B/F4A.

Setup cannot be done under Windows XP or Windows 2000

- j. Refer to “Troubleshooting” on the bundled CD-ROM.

3. About Hardware

Hardware specification

Table 3.1. Specification of BUS-PC(CB)SF

Item	Specification
Compatible PC card slot	PC Card Standard-compliant CardBus
Outside dimensions (mm)	TYPE II (119.0 x 54.0 x 19.0mm)
Power consumption (Max.)	3.3VDC 450mA *1
Usable condition	0 - 50°C, 20 - 90%RH (No condensation)
Weight	40g

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

Table 3.2. Specification of the bundled cable

Item	Specification
Bundled connection cable	STP-category, 5e straight cables 12m x 2 cables
Weight	400g / cable

EAD(CB)SF User's Manual

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