

BUF(PCI)  
PCI Bus Expansion  
Adapter Set  
User's Guide

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## Product Configuration

BUS-PC(PCI)... 1  
BUS-PAC(PCI)... 1  
PC-MB8(PCI)... 1  
ATX power control cable... 1  
Connecting cable ... 1  
User's Guide (this booklet) ... 1

### **Unpacking:**

This board is specially packed to prevent damage in shipping. It is wrapped in an anti-static bag.

#### *Note!*

*Do not remove the board from its protective packaging until the computer case is open and ready for installation. Electrical static can cause damage to electronic components.*

#### *Note!*

*Check the contents to make sure that you have everything listed above. If you don't have all the items, please contact CONTEC.*

## User Feedback

We have tried to consider all possible issues in the preparation of this User's Guide. Should you notice any omission, mistake, or questionable item in the document, please free to contact:

**CONTEC MICROELECTRONICS U.S.A., INC.**

Phone: (800)888-8884 (Toll-free Call)  
(408)434-6767

Fax: (408)434-6884

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## Introduction

### About the BUF(PCI) Board

Thank you for purchasing the BUF(PCI) expansion bus adapter. The BUF(PCI) is an expansion bus adapter that allows a PCI bus expansion slot to be added by connecting the adapter to the PC.

The BUF(PCI) product includes the following items.

- BUS-PC(PCI) : Install on the PC.
- BUS-PAC(PCI): Install in the dedicated slot on the PC-MB8(PCI).
- PC-MB8(PCI) : Install as a motherboard in the PC case\*, such as Contec's FA-UNTT-F8DR.
- ATX power control cable
- Connecting cable

\* You can use a PC case, including the ones that allow a BABY-AT-size motherboard to be installed or an ATX specification-compliant case. For more information about a mountable case, see the PC-MB8(PCI) external dimension diagram provided later.

### Features

- To add a PCI bus expansion slot, mount the BUS-PC(PCI) in a PCI bus expansion slot in the PC, and the PC-MB8(PCI) and BUS-PAC(PCI) in the PC case.
- Compatible with 32-bit PCI bus (+5V specifications)
- Using the ATX power for the PC-MB8(PCI) allows interconnection with the power supplied to the PC.



### **Limited Three-Year Warranty**

CONTEC Interface boards are warranted by CONTEC MICRO-ELECTRONICS, U.S.A., Inc. to be free from defects in material and workmanship for up to three years from the date of purchase by the original purchaser.

Replacement or repair will be free of charge only when this device is returned to CONTEC U.S.A., freight prepaid with the original invoice.

This warranty is not applicable for scratches or normal wear, but only for the electronic circuitry and original boards. It is also 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. If a replacement with a new device is needed, regular factory prices will be charged, and the product will be returned to you COD, and no other written warranty will apply.

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.

### **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 our Sales Administration Department before returning any product. No product will be accepted without an RMA number.

**CONTEC MICROELECTRONICS U.S.A., INC.**

2188 Bering Drive  
San Jose, CA 95131

Phone: (800) 888-8884 (Toll-free Call)  
(408) 434-6767

Fax: (408) 434-6884

## **About the Manual**

This manual is organized as follows:

### **Chapter 1. Identifying Each Part of the Boards**

Identifies the name of each part on the boards and explains its function.

### **Chapter 2. Setting Up**

Explains installation of the boards through starting the system.

### **Chapter 3. Specifications**

Explains the specifications of this product and items to be checked when the product malfunctions.

## Cautions

Please be careful to observe the following precautions whenever handling this product.

- Do not subject the board to physical shock or bending. This can damage the board.
- Do not attempt to modify the board in any way. The manufacturer will not be responsible for any boards that have been modified.
- Do not touch the gold-plated contacts (edge connectors) with your bare hands. This can prevent proper connections. If the contacts have been touched, they should be wiped clean with an industrial alcohol solution.
- The board should be used with a PC expansion slot that meets PCI bus standards, or with a CONTEC FA-UNIT-F8DR unit.
- Never insert the board in a slot, or remove it, when the power supply is on. This can cause damage to the board. Always be sure the PC power is off before inserting or removing the board.
- The total current consumption of boards mounted in expansion slots of the PC-MB8(PCI) must not exceed the allowable power capacity of the PC-MB8(PCI). This can cause damage.
- Be sure that external power supply voltage and drive current do not exceed rated levels.
- The BUF(PCI) can only be used with certain personal computers and boards. Be sure to verify operating capabilities before using. To verify operation, insert the board in SLOT4 to 7. (For personal computers with BIOS not listed below, SLOT1 to 3 may be recognized in cases where SLOT4 to 7 is not recognized.)

## Restrictions

The BUF(PCI) can only be used with certain personal computers and boards. Be sure to verify operating capabilities before using.

### <Personal computer compatibility>

The BUF(PCI) provides bus expansion by means of PCI-to-PCI Bridge. Recognition of the BUF(PCI) depends on whether the BIOS installed in the personal computer can recognize PCI-to-PCI Bridge. The following BIOS manufacturers support PCI-to-PCI Bridge. When the personal computer is switched on, the screen will display a message resembling one of the following examples.

- (1) Personal computers with phoenix BIOS (Ver. 4.04 or later)

Message : "phoenix BIOS Verxxx"

- (2) Personal computers with AMI (American Megatrends, Inc.)

BIOS (Ver. 1.00.02 or later)

Message : "AMI (American Megatrends, Inc.) BIOS Verxxx"

\* Even if the BIOS version number is the same as listed above, the BUF(PCI) might not operate because of its minor version difference.

### <Boards that cannot be used>

The following boards cannot be used in the PC-MB8(PCI) expansion slot.

- (1) Graphic display boards (VGA boards)
- (2) Boards designed to increase the number of units expanded with a PCI bus.
- (3) A board specifically listed in the PC manual as one that cannot be used.
- (4) A board might not operate depending on its specifications, although it may well be in compliance with the PCI bus specification.

### <Restrictions due to BUF(PCI) versions>

The BUF(PCI) consists of a set of three circuit boards and a number from 7067B through 7069B is stamped on the surface of each circuit board. The last alphabet in each number indicates the version of the circuit board. You cannot use a combination of boards if their versions are different. Such combination will cause malfunctions and/or failures.

## Identifying Each Part of the Board

### BUS-PC(PCI)

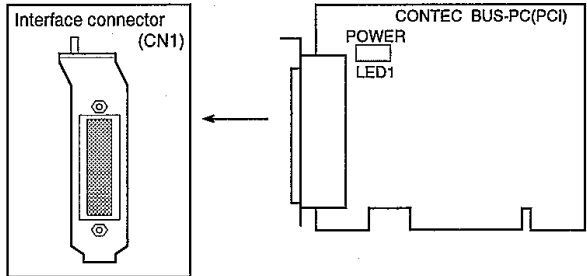


Figure 1. BUS-PC(PCI) Installation

CN1 : Attaches to the connecting cable (included)

LED1 : Indicates when the power supply is on

### BUS-PAC(PCI)

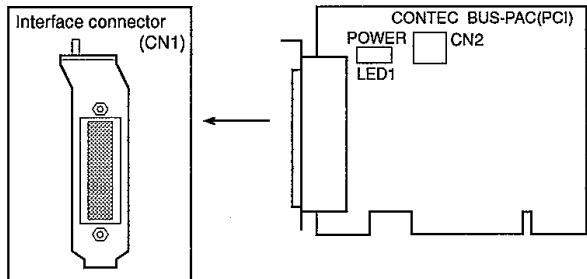


Figure 2. BUS-PAC(PCI) Installation

CN1 : Attaches to the connecting cable (included)

CN2 : Connects the ATX power supply control cable that came with the product. \*

LED1 : Indicates when the power supply is on

\* Enabled only when the ATX power is used to power the PC-MB8(PCI).

## PC-MB8(PCI)

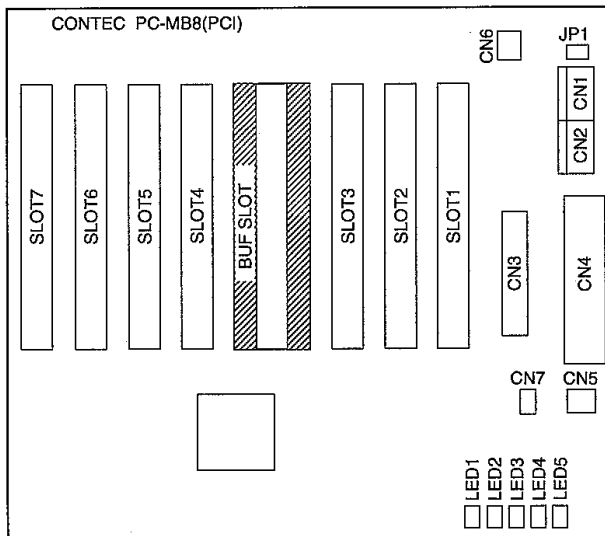


Figure 3. PC-MB8(PCI) Installation

- CN1, CN2 : Connect the PS/2 power supply connectors.
- CN3 : Connects the ATX power supply connector.
- CN4 : To be used when using neither the PS/2 nor ATX power or when +3.3V power is needed when using the PS/2 power.
- CN5 : The power supply terminal for the power LED on the PC case in which the PC-MB8(PCI) is installed.
- CN6 : Connects the ATX power supply control cable that came with the product.
- JP1 : Allows the power good signal to be derived for the PS/2 power.
- SLOT1 to 3 : User definable slots. These slots are one PCI bus level closer to the host than SLOT4 to 7.
- SLOT4 to 7 : User definable slots. These slots are one PCI bus level farther from the host than SLOT1 to 3.
- BUF SLOT : This slot is reserved for the BUS-PAC(PCI) connection. Do not mount any other boards here.

### Identifying Each Part of the Board

---

- LED1 : DC+3.3V power supply indicator LED  
(lights when power is ON)
- LED2 : DC+5V power supply indicator LED  
(lights when power is ON)
- LED3 : DC-5V power supply indicator LED  
(lights when power is ON)
- LED4 : DC-12V power supply indicator LED  
(lights when power is ON)
- LED5 : DC+12V power supply indicator LED  
(lights when power is ON)

## Setting Up

### Setting Up the PC-MB8(PCI)

#### Mounting the PC-MB8(PCI)

Set the PC-MB8(PCI) in the PC case and fasten it with screws. The following section explains how to mount the PC-MB8(PCI) using the FA-UNIT-F8DR manufactured by Contec. Use the following information for setup when using a commercially available BABY AT case or an ATX specification-compliant case.

**Note!**

*Be sure to disconnect the FA-UNIT-F8DR from the power outlet before performing this operation.*

- (1) Remove the cover of the FA-UNIT-F8DR.
- (2) Insert the PC-MB8 (PCI) board and affix with screws. The board should be oriented so that the CONTEC logo ('CONTEC PC-MB8(PCI)') is facing the slotted window.

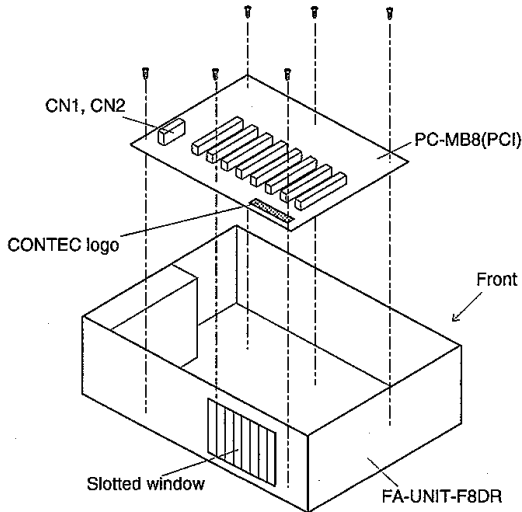


Figure 4. Motherboard Installation



## Connecting the Power Supply Connectors (When Using PS/2 Power)

Connectors to be connected vary with the power you are using. Make connections according to the power you are using. The connection procedure for the PS/2 power is explained here.

### PS/2 power supply connectors (CN1 and CN2)

Connect PS/2 power supply connectors to CN1 and CN2. Connector wiring is as shown below.

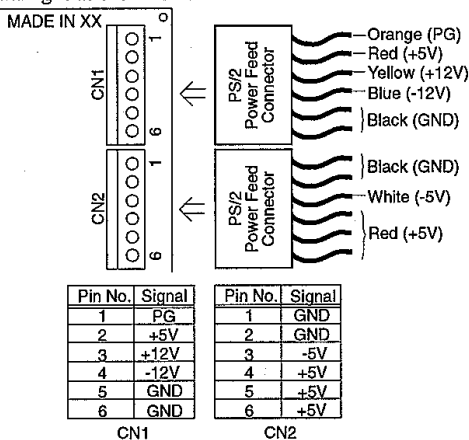


Figure 5. Connecting CN1 and CN2

### Power Good Jumper (JP1)

Pin 1 of jumper JP1 is connected to pin 1 of connector CN1. This pin can be used to pull off the 'Power good' signal of the power feed unit.

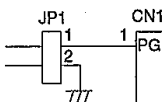


Figure 6. Power Good Jumper

#### Note!

Jumper JP1 is not provided with a short connector. (Pin 2 of this jumper is connected to GND, and therefore JP1 must never be shorted under any circumstances.)

## Power Supply Connections (for ATX Supply)

Different connectors are used depending on the type of power supply. Be sure to use the correct connection for the power supply you are using. The following example illustrates connections for use with an ATX power supply.

### ATX power supply connector (CN3)

Connect the ATX power supply to connector CN3. The connector wiring is shown below.

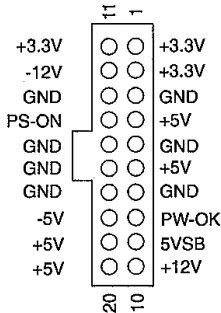


Figure 7. CN3 Connector Wiring

### ATX power supply control cable connections (CN6)

Connect the ATX power supply control cable (included) to connector CN2 on the BUS-PAC(PCI) to be installed later. This will enable the PC-MB8(PCI) power to be interlocked with the personal computer power.

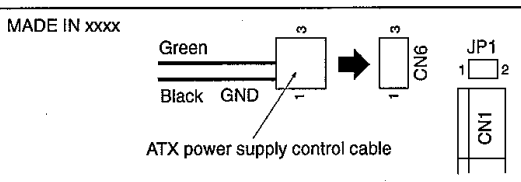


Figure 8. ATX Power Supply Control Cable Connection

## Setting Up

### ATX power switch connector (CN7)

Connector CN7 is used to connect the power switch from the ATX personal computer unit. The power switch is a momentary switch, toggling the ATX power supply between ON and SLEEP modes.

\* SLEEP mode indicates that the main ATX power unit is on, with only the 5VSB power (+5V power supply in standby mode) being supplied.

#### Note!

*Do not switch the PC-MB8(PCI) power supply between ON and SLEEP settings while the personal computer power is on. This will cause bus adapter recognition to be cancelled. Always restart the personal computer after switching between ON and SLEEP settings.*

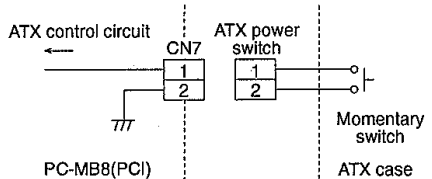
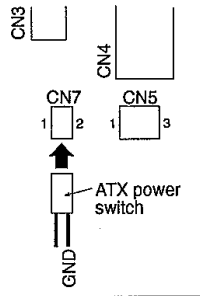


Figure 9. Power Switch Connections      Figure 10 Power Switch Circuit Diagram

## Other Connectors

### Terminal block (CN4)

Supply power from CN4 when using other than the PS/2 and ATX power or if +3.3 V power supply is needed when using the PS/2 power.

The input current specifications are as listed below.

Table 1. CN4 Specifications

Voltage	+3.3VDC	+5VDC	+12VDC	-5VDC	-12VDC
Max. current	2A	2A	1A	0.1A	0.1A

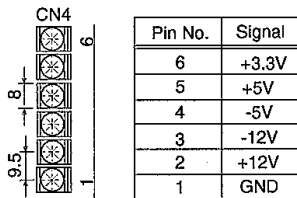


Figure 11. CN4 Wiring

**Power supply terminal for the external LED (CN5)**

CN5 is the power supply terminal for the power LED in the PC case. How to connect the terminal to the power LED of the FA-UNIT-F8DR is shown below. Use this information for your reference if you are using a case designed for another PC.

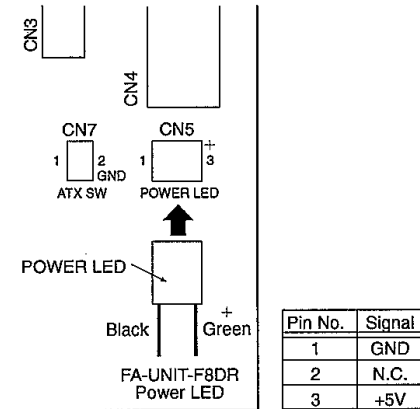


Figure 12. External LED Power Feed Pin

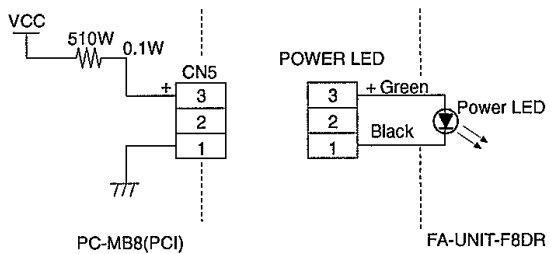


Figure 13. External LED Power Feed Circuit

## Setting Up the BUS-PC(PCI)

### BUS-PC(PCI) Installation

Mount the BUS-PC(PCI) in the PC.

- (1) Turn off the power to the personal computer and all peripheral devices, and remove AC power cables from the power outlet.
- (2) Remove the cover from the personal computer. For instructions on removing the cover, refer to the User's Manual provided with the personal computer.
- (3) Remove the screws from the cover on the PCI bus slot where you will install the board, then remove the slot cover.
- (4) Insert the board into the PCI bus slot.
- (5) After the board is in place, pull it lightly to ensure that it does not slip out.
- (6) Use the screws removed in step (3) to affix the board.
- (7) Replace the cover on the personal computer.

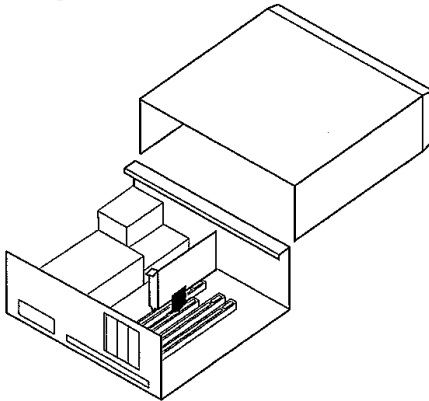


Figure 14. Board Installation

**Note!**

- For instructions on installation, see the description of 'Installation Methods' in the User's Manual provided with the personal computer you are using.
- Before installing any board, be sure to disconnect the personal computer from the power outlet.
- When installing any board, be sure to remove all metal, jewelry, etc. from your hands and wrists.

## Setting Up the BUS-PAC(PCI)

### BUS-PAC(PCI) Installation

Mount the BUS-PAC(PCI) on the PC-MB8(PCI) which has been fastened to the PC case.

**Note!**

- Before you begin installation, be sure to disconnect the PC case power plug from the wall outlet.
- Be sure to install the BUS-PAC(PCI) board in the 'BUF SLOT' labeled "BUFFER BOARD ONLY."

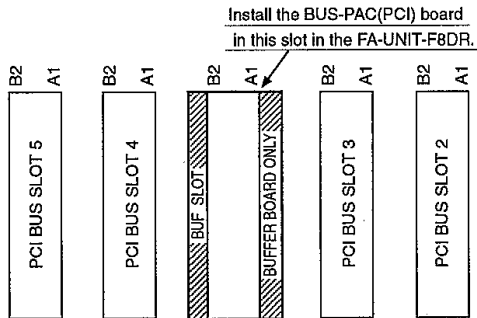


Figure 15. BUS-PAC(PCI) Installation

### Connecting CN2

Connect the ATX power control cable if the PC-MB8(PCI) is powered with the ATX power. For more information, see the section on mounting the PC-MB8(PCI).

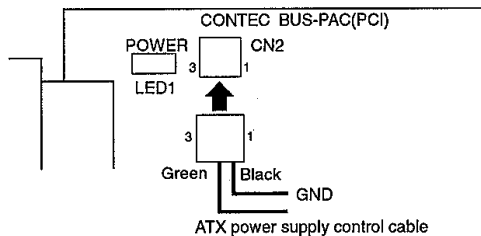


Figure 16. CN2 Connection Diagram

## Connecting the BUS-PC(PCI) Board to the BUS-PAC(PCI) Board

After both boards are installed properly, use the included connecting cable to connect the BUS-PC(PCI) board to the BUS-PAC(PCI) board. The connecting cable is a 96-pin shielded cable with identical connectors on both ends.

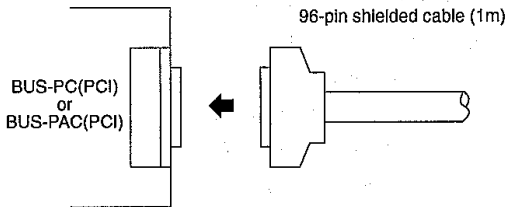


Figure 17. Cable Connections



## Starting the System (with other than the ATX Power)

### Turning the System Power ON

- (1) Be sure that the power plug for the PC case mounted with the PC-MB8(PCI) is connected to a wall outlet.
- (2) Turn the FA-UNIT-F8DR power switch ON.
- (3) Be sure that the PC-MB8(PCI) power LED is lit.
- (4) Be sure that the PC power plug is connected to a wall outlet.
- (5) Turn the personal computer power ON.
- (6) Check the front panel of the personal computer to see that the power indicator LED is ON.

**Note!**

*Be sure to switch on the power to the PC-MB8(PCI) before the personal computer.*

*If the power is not turned on in this sequence, the bus adapter will not be recognized by the personal computer.*

### Turning the System Power OFF

- (1) Turn the personal computer power OFF.
- (2) Turn the FA-UNIT-F8DR power OFF.

**Note!**

*Do not turn the PC-MB8(PCI) power ON or OFF while the personal computer is ON. This will terminate recognition of the bus adapter. If the PC-MB8(PCI) power is turned ON or OFF, you will need to restart the personal computer.*

---

## Starting the System (with the ATX Power Supply)

If the PC-MB8(PCI) is powered by the ATX, that power can be interlocked or non-interlocked with the power supplied to the PC or both can be used in parallel, depending on how you connect the connector.

Be sure that the ATX power supply connector is connected to CN3.

### Interlocking with the PC Power

Be sure that CN6 on the PC-MB8(PCI) and CN2 on the BUS-PAC(PCI) are connected with the ATX power control cable. Leave CN7 on the PC-MB8(PCI) unconnected.

#### Turning the system power supply ON

- (1) Turn the main ATX power supply ON.
- (2) Turn the PC power ON.
- (3) The ATX power is turned ON interlocked with the PC power.
- (4) Be sure that the power LED is lit on the PC-MB8(PCI).

#### Turning the system power OFF

- (1) Turn the PC power OFF.
- (2) The ATX proceeds to sleep interlocked with the PC power.
- (3) To turn the ATX power completely OFF, turn the main power OFF.

### Not interlocking with the PC Power

Be sure that CN7 on the PC-MB8(PCI) and the power switch on the ATX specification-compliant case are connected. Leave CN6 on the PC-MB8(PCI) unconnected.

#### Turning the system power ON

- (1) Turn the main ATX power ON.
- (2) Using the power switch connected to CN7 on the PC-MB8(PCI), turn the ATX power ON.
- (3) Be sure that the power LED is lit on the PC-MB8(PCI).
- (4) Turn the PC power ON.
- (5) Be sure that the power LED is lit on the PC.

## Setting Up

---

### Turning the system power OFF

- (1) Turn the PC power OFF.
- (2) Using the power switch on the PC case, put the ATX to sleep.
- (3) To turn the ATX power completely OFF, turn the main power OFF.

### Using Both in Parallel

Be sure that CN6 on the PC-MB8(PCI) is connected with CN2 on the BUS-PAC(PCI) and that CN7 on the PC-MB8(PCI) is connected with the power switch on the ATX specification-compliant PC case.

The ATX can be turned ON or put to sleep by turning the PC power ON/OFF or by using the switch on the PC case.

#### *Note!*

*Do not turn the PC-MB8(PCI) ON or put it to sleep if the PC power is turned ON. Doing so would defeat the capacity to recognize the bus adapter. To turn the PC-MB8(PCI) ON or to put it to sleep, you must also restart the PC.*

## Precautionary Information

- Frame grounding of the personal computer and one or more PC-MB8(PCI) units should follow the heavy lines in the illustration below.
- When adding more expansion slots using the BUF(PCI), mount the BUS-PC(PCI) in the expansion slot in the PC. Additional installation from an installed expansion slot is not possible.

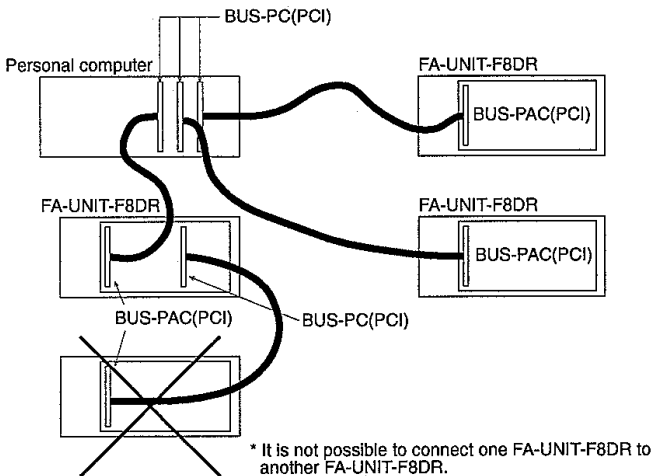


Figure 18. Example of Expansion Using Three Sets of BUF(PCI)

## Specifications

### Specification

Table 2. System Specifications

Item	Specification
Bus compatibility	32-bit PCI bus (+5V spec)
Address space	32-bit memory addressing, I/O addressing
Interrupt level	INTA--INTD (PCI specification spec. 2.1)
Bus operation clock	33MHz (Max.)
Connecting cable (included)	96-pin shielded cable, 1m

Table 3. BUS-PC(PCI) Board Specifications

Item	Specification
Current consumption (*1)	DC 5V 700mA (Max.) (*2) (*3)
	DC 5V 300mA (Typ.) (*3)
Operating conditions	0 to 50°C, 30 to 90% humidity (no condensation)
External dimensions	132.0 x 125.0 x 18.5 mm (including slot cover)
Weight	100g

\*1 : The BUF(PCI) card will not be recognized if the personal computer power is turned ON before the PC-MB8(PCI) power.

\*2 : Represents current consumption when only the personal computer power is on, and PC-MB8(PCI) unit power is off.

\*3 : Power is fed from personal computer.

Table 4. BUS-PAC(PCI) Specifications

Item	Specification
Current consumption (*1)	DC 5V 700mA (Max.) (*2) (*3)
	DC 5V 500mA (Typ.) (*3)
Operating conditions	0 to 50°C, 30 to 90% humidity (no condensation)
External dimensions	132.0 x 125.0 x 18.5 mm (including slot cover)
Weight	100g

\*1 : BUS-PAC(PCI) specifications represent the total value of BUS-PAC(PCI) and PC-MB8(PCI) current consumption.

\*2 : Represents current consumption when only the FA-UNIT-F8DR unit power is on, and personal computer power is off.

\*3 : Power supplied from personal computer case.

Specifications

Table 5. PC-MB8(PCI) Specifications

Item	Specification
User definable slots	7 slots
Current consumption	[The total value of BUS-PAC(PCI) and PC-MB8(PCI) current consumption is listed under BUS-PAC(PCI) specifications.]
Operating conditions	0 to 50°C, 30 to 90% humidity (no condensation)
External dimensions	220.0 x 185.0 x 20.0 mm
Weight	310g

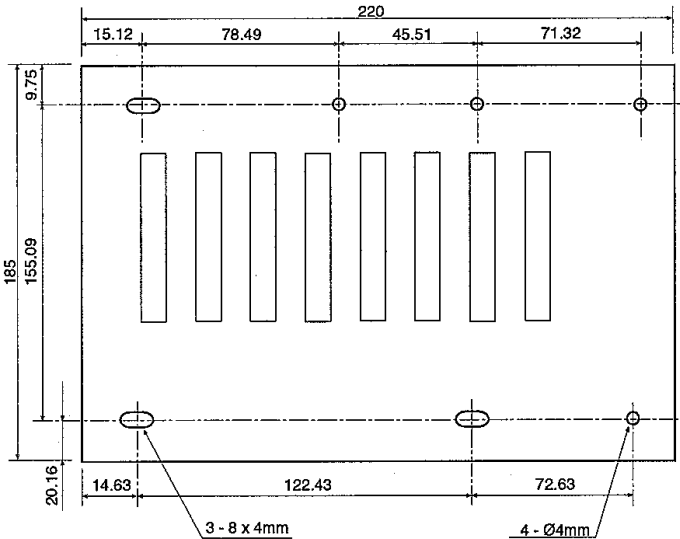


Figure 19. PC-MB8(PCI) Board Dimensions

## System Block Diagram

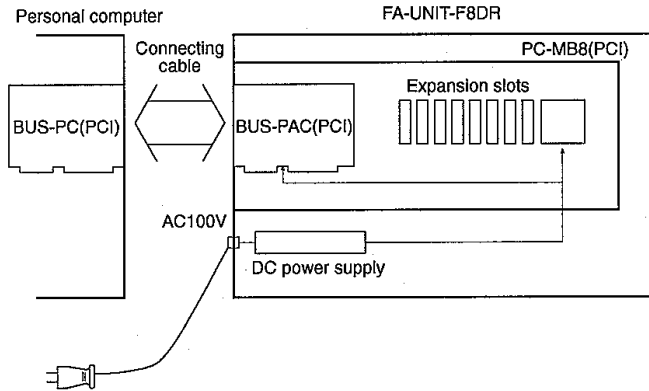


Figure 20. System Block Diagram

## Expansion Bus Signals

The signals of the PCI bus expansion slot which has been added using the BUF(PCI) are subject to the restrictions listed in the table below. For information about the function of each signal line, see PCI bus standards. I/O directions indicate input (I) and output (O) seen from the installed board.

The 'master' and 'target' columns indicate the status of the installed board.

Table 6. Restrictions on Expansion Slot Signals [32-bit PCI Bus (+5V Specifications)]

Pin No.	Signal name	Input/Output		Note	Pin No.	Signal name	Input/Output		Note
		Master	Target				Master	Target	
A01	TRST*	--	--	*1	B01	-12V	--	--	*2
A02	+12V	--	--	*2	B02	TCK	--	--	*1
A03	TMS	--	--	*1	B03	Ground	--	--	
A04	TDI	--	--	*1	B04	TDO	--	--	*1
A05	+5V	--	--	*2	B05	+5V	--	--	*2
A06	INTA*	O	O		B06	+5V	--	--	*2
A07	INTC*	O	O		B07	INTB*	O	O	
A08	+5V	--	--	*2	B08	INTD*	O	O	
A09	Reserved	--	--	*1	B09	PRSNT1*	--	--	*3 (fixed LOW)
A10	+5V(I/O)	--	--	*2	B10	Reserved	--	--	*1
A11	Reserved	--	--	*1	B11	PRSNT2*	--	--	*3(OPEN)
A12	Ground	--	--		B12	Ground	--	--	
A13	Ground	--	--		B13	Ground	--	--	
A14	Reserved	--	--	*1	B14	Reserved	--	--	*1
A15	RST*	I	I		B15	Ground	--	--	
A16	+5V(I/O)	--	--	*2	B16	CLK	I	I	
A17	GNT*	I	I		B17	Ground	--	--	
A18	Ground	--	--		B18	REQ*	O	--	
A19	Reserved	--	--	*1	B19	+5V(I/O)	--	--	*2
A20	AD[30]	I/O	I/O		B20	AD[31]	I/O	I/O	
A21	+3.3V	--	--	*2	B21	AD[29]	I/O	I/O	
A22	AD[28]	I/O	I/O		B22	Ground	--	--	
A23	AD[26]	I/O	I/O		B23	AD[27]	I/O	I/O	
A24	Ground	--	--		B24	AD[25]	I/O	I/O	
A25	AD[24]	I/O	I/O		B25	+3.3V	--	--	*2
A26	IDSEL	I	I		B26	C/BE[3]*	O	I	
A27	+3.3V	--	--	*2	B27	AD[23]	I/O	I/O	
A28	AD[22]	I/O	I/O		B28	Ground	--	--	
A29	AD[20]	I/O	I/O		B29	AD[21]	I/O	I/O	
A30	Ground	--	--		B30	AD[19]	I/O	I/O	
A31	AD[18]	I/O	I/O		B31	+3.3V	--	--	*2

Continued to next page



## Specifications

Table 6. Restrictions on Expansion Slot Signals [32-bit PCI Bus (+5V Specifications)], <Continued>

Pin No.	Signal name	Input/Output		Note	Pin No.	Signal name	Input/Output		Note
		Master	Target				Master	Target	
A32	AD[16]	--	--		B32	AD[17]	I/O	I/O	
A33	+3.3V	--	--	*2	B33	C/BE[2]*	O	I	
A34	FRAME*	O	I		B34	Ground	--	--	
A35	Ground	--	--		B35	IRDY*	O	I	
A36	TRDY*	I	O		B36	+3.3V	--	--	*2
A37	Ground	--	--		B37	DEVSEL*	I	O	
A38	STOP*	I	O		B38	Ground	--	--	
A39	+3.3V	--	--	*2	B39	LOCK*	O	I	
A40	SDONE	--	--	*1	B40	PERR*	I/O	O	
A41	SBO*	--	--	*1	B41	+3.3V	--	--	*2
A42	Ground	--	--		B42	SERR*	O	O	
A43	PAR	I/O	I/O		B43	+3.3V	--	--	*2
A44	AD[15]	I/O	I/O		B44	C/BE[1]*	O	I	
A45	+3.3V	--	--	*2	B45	AD[14]	I/O	I/O	
A46	AD[13]	I/O	I/O		B46	Ground	--	--	
A47	AD[11]	I/O	I/O		B47	AD[12]	I/O	I/O	
A48	Ground	--	--		B48	AD[10]	I/O	I/O	
A49	AD[09]	I/O	I/O		B49	Ground	--	--	
A50	CONNECTOR	--	--	5 Volt Key	B50	CONNECTOR	--	--	5 Volt Key
A51	KEY	--	--	5 Volt Key	B51	KEY	--	--	5 Volt Key
A52	C/BE[0]*	O	I		B52	AD[08]	I/O	I/O	
A53	+3.3V	--	--	*2	B53	AD[07]	I/O	I/O	
A54	AD[06]	I/O	I/O		B54	+3.3V	--	--	*2
A55	AD[04]	I/O	I/O		B55	AD[05]	I/O	I/O	
A56	Ground	--	--		B56	AD[03]	I/O	I/O	
A57	AD[02]	I/O	I/O		B57	Ground	--	--	
A58	AD[00]	I/O	I/O		B58	AD[01]	I/O	I/O	
A59	+5V(I/O)	--	--	*2	B59	+5V(I/O)	--	--	*2
A60	REQ64*	--	--	*3 (fixed HI)	B60	ACK64*	--	--	*3 (fixed HI)
A61	+5V	--	--	*2	B61	+5V	--	--	*2
A62	+5V	--	--		B62	+5V	--	--	*2

An asterisk (\*) after a signal name denotes an active-low signal.

\*1: These signals are unconnected (OPEN), and are independent from the personal computer.

\*2: This signal is independent of the PC and is dependent on the power specifications of the PC-MBB(PCI).

\*3: These signals are independent from the personal computer, and are used for internal buffer board operation.

## Troubleshooting

If your BUF(PCI) is not operating properly, check the following.

### If the Power is not ON

- (1) Check that the power cable is connected properly.
- (2) Check that the personal computer and PC-MB8(PCI) power is turned on.
- (3) Check that the procedures in Chapter "Setting Up" of this manual have been followed.
- (4) If the power is still not on, check whether the PC-MB8(PCI) power will turn on with no boards installed. If the power does turn on in the case, check whether the total current consumption of the installed boards exceeds the supply capacity of the PC-MB8(PCI).
- (5) If the ATX power is used, be sure that designated cables are connected to CN6 and CN7 on the PC-MB8(PCI).

### If the BUF(PCI) Connector is not Recognized

- (1) Check that the BUS-PC(PCI) connector and BUS-PAC(PCI) board are properly installed.
- (2) Check that the expansion bus cable is connected properly.
- (3) Check that the PC-MB8(PCI) power is turned on before the personal computer is turned on.
- (4) Contact the personal computer manufacturer to determine whether the computer PCI BIOS supports PCI-to-PCI Bridge.

If the BUF(PCI) does not function properly, even if it has been checked thoroughly, fill out the questionnaire that comes with the product and then either fax to Contec Information Center or e-mail it to us.

## Differences Between No. 706xA and No. 706xB

Each BUF(PCI) board number has been updated from No. 706xA to No. 706xB due to addition and modification of some board functions. The differences between the old and new versions are summarized in the tables below.

Table 7. Differences from the Existing BUS-PC(PCI)

	Existing version No. 7067A	Updated version No. 7067B
Reset circuit	The BUS-PAC(PCI) power input status was not reflected in reset conditions.	The BUS-PAC(PCI) power input status is added to the reset conditions to make operations possible with all system power supplies, including an expansion unit, turned ON.
Power indicator LED	Lead component type, Light emitted : Red	Surface mount type, Light emitted : Bright green

Table 8. Differences from the Existing BUS-PAC(PCI)

	Existing version No. 7068A	Updated version No. 7068B
Change in the connector (CN2) function	Used as the power supply terminal for the external LED.	The power supply terminal for the external LED has been eliminated. Use CN5 on the PC-MB8(PCI) for that terminal. To CN2, connect the ATX power supply control cable.
Power indicator LED	Lead component type, Light emitted : Red	Surface-mount type, Light emitted : Bright green

Table 9. Differences from the Existing PC-MB8(PCI)

	Existing version No. 7069A	Updated version No. 7069B
Supporting ATX power	None	The ATX power supply connector (CN3) is added. The terminal (CN6) for connecting the ATX power control cable is added. The connector (CN7) for connecting the ATX power switch.
Supplying +3.3V to the expansion slot	Not allowed	Can be supplied from the ATX power connector (CN3) and the terminal block (CN4).
Power indicator LED	Lead component type, Light emitted : Red	Surface-mount type, Light emitted : Bright green

Table 10. Other Differences from the Existing Product

	Existing product	Updated version
Attached cables	Connecting cable	Connecting cable, ATX power supply control cable

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## Replacing No. 706xA

When replacing the existing product (circuit board No. 706xA) you are using with its upgraded version, keep the following points in mind.

**BUS-PC(PCI)**

None.

**BUS-PAC(PCI)**

Leave CN2 on the upgraded product unconnected. If CN2 on the existing product was used as the terminal to power the external LED, use CN5 on the PC-MB8(PCI) of the updated version for that purpose.

**PC-MB8(PCI)**

- Connect the PS/2 power to CN1 and CN2. If the power was connected to the power terminal block on the existing product, connect the power to the terminal block (CN4). When connecting, be sure of the input voltage specified on the circuit board.
- The CN5 is the external LED power supply terminal.
- Leave the terminal for connecting the ATX power supply control cable unconnected.
- Leave the ATX power switch connector (CN7) unconnected.
- LED1 comes on when the ATX power is used or when the power is supplied to the +3.3 V terminal on the power terminal block (CN4).

**Note!**

*You cannot use a combination of circuit boards if their versions are different. Different versions will cause malfunctions and/or failures.*

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# CONTEC Group

- JAPAN** : Headquarters  
CONTEC Co., LTD.  
3-9-31, Himesato, Nishiyodogawa-ku, Osaka 555-0025, Japan  
Tel : +81 (6) 6477-5219 Fax : +81 (6) 6477-1692  
E-mail : intsales@osaka.contec.co.jp
- U.S.A.** : CONTEC MICROELECTRONICS U.S.A. INC.  
744 South Hillview Drive, Milpitas, CA 95035 U.S.A.  
Tel : +1 (408) 719-8200 Fax : +1 (408) 719-6750  
E-mail : tech\_support@contecusa.com
- EUROPE** : CONTEC MICROELECTRONICS EUROPE B.V.  
Binnenweg 4, 2132 CT, Hoofddorp, The Netherlands  
Tel : +31 (23) 567-3030 Fax : +31 (23) 567-3035  
E-mail : tech\_support@conteceu.nl
- KOREA** : HYOJIN CONTEC Co., LTD.  
Ki-im Bldg. #399, Shindolim-Dong, Kuro-ku, Seoul, Korea  
Tel : +82 (2) 2636-4277/8 Fax : +82 (2) 2636-4279  
E-mail : product@conteck.com
- CHINA** : INTERNATIONAL CONTEC TECHNOLOGY CO., LTD.  
B-8F, Hua Tong Building, No. B19, Che Gong Zhuang West Road,  
Hai Dian District, Beijing 100044, China  
Tel : +86(10)8801-8228 Fax : +86 (10)8801-8209  
E-mail : ict@ict.com.cn
- SHANGHAI CONTEC MICROELECTRONICS CORP.**  
No. 481 Gui Ping Road, Cao He Jing Hi-Tech Park Shanghai, 200233, China  
Tel : +86 (21) 6485-1907 Fax : +86 (21) 6485-0330  
E-mail : contec@contec.com.cn
- SHENYANG CONTEC MICROELECTRONICS Co., LTD.**  
No. 169, Qingnian Street, Shenhe District, Shenyang 110015, China  
Tel : +86 (24) 2392-9771 Fax : +86 (24) 2392-9773
- TAIWAN** : MACROMATE CORP.  
8F, Universal Center, No.179, Ta-Tung Rd., Sec.1 Hsi-Chih, Taipei Hsien, Taiwan,  
R.O.C  
Tel : +886 (2) 2647-9353 Fax : +886 (2) 2647-9373  
E-mail : intl@macromate.com.tw