

CUSTOMER NOTIFICATION

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IE-70000-MC-NW-A
Preliminary User's Manual

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CHAPTER 1 OVERVIEW

1.1 Overview of IE-70000-MC-NW-A

The IE-70000-MC-NW-A is an external in-circuit emulator that is connected to a microcontroller with an on-chip debug control unit (DCU) to provide efficient debugging of hardware and software.

The main functions of the IE-70000-MC-NW-A are control of the microcontroller's on-chip DCU, collection of trace data provided by the microcontroller (CPU), and a ROM emulation function. The IE-70000-MC-NW-A is operated from a host machine.

To use this product to configure a development support system for debugging, it is necessary to purchase a separately available power supply unit, interface board, and dedicated debugger.

1.2 Features

- Can be used for all V850E series CPUs with on-chip DCUs
- Built-in DCU control interface
- Branch PC trace using trace packet data method (including on-chip cache)
- Data access trace using trace packet data method
- ROM emulation function

1.3 Hardware Specification of IE-70000-MC-NW-A

Item	Details
Target CPU	CPUs with on-chip debug unit Target CPU operating voltage: 3.0 to 3.6 V
On-chip debug unit interface (Execution control section)	Interface clock (DCK): 25 MHz No. of interface signal pins: 5 Interface signal pin functions: <ul style="list-style-type: none"> • DCK (input): Interface clock input • DMS (output): Interface mode select output • DDI (input): Interface data input • DDO (output): Interface data output • DRST(-) (output): On-chip DCU reset output
On-chip debug unit interface (Trace control section)	Trace clock (TRCCLK): 100 MHz (MAX.) No. of trace signal pins: 6 Trace signal pin functions: <ul style="list-style-type: none"> • TRCCLK (input): Trace clock input • TRCDATA[3:0] (input): Trace data input • TRCEND (input): Trace data end position indicator input Trace packet data length: 8 bits to 256 bits (8-bit units) Trace memory capacity: <ul style="list-style-type: none"> • 3 MB (including 1 MB time stamp memory) Trace packet data size: Approx. 200 KB min. to 2 MB max. • Size can be freely specified from 24 bytes to 3 MB in 24 byte units. Trace start: <ul style="list-style-type: none"> • Trace event (built into on-chip DCU) • Forced trace start (built into on-chip DCU) Trace end: <ul style="list-style-type: none"> • Trace memory full • Detection of trace end status of DCU Trace modes: 3 modes <ol style="list-style-type: none"> (1) Trace from trace event to trace end (2) Trace before and after match event (delayed trace) Delay counter 0-32K count, can be set to any value (Count of 1 equals 24 bytes in trace memory) (3) Trace abort using trace event (built into on-chip DCU)
ROM emulation functions	ROM emulation memory capacity: 2 MB x 2 banks (access time: 60 ns or higher) Compatible ROM: 4M/8M/16 Mbit ROM 3 V/5 V 16-bit bus mode only Page access compatible ROM emulation probe: Up to two probes can be connected (sold separately) 40-pin/42-pin DIP package type
Break function	Built into on-chip DCU of target CPU
Pin mask function	Built into on-chip DCU of target CPU

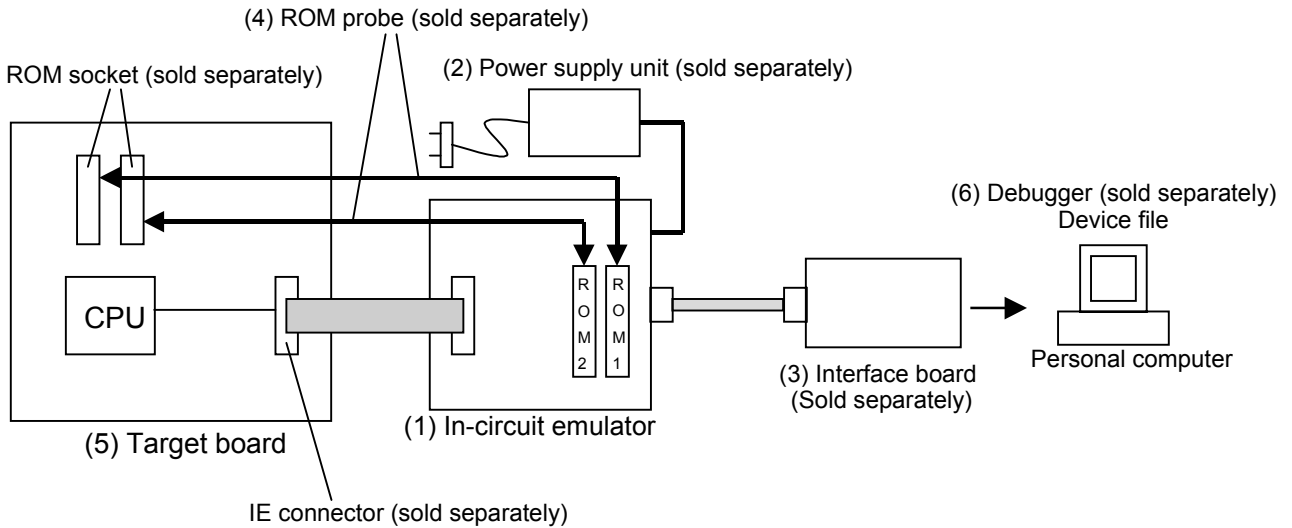
Item	Details
Target board mounting connector	Recommended connector: 2 6-pin straight type KEL 8830E-026-170S 26-pin right-angle type KEL 8830E-026-170L
Operating voltage/current consumption	Operating voltage: +5 V \pm 5% Current consumption: 500 mA (TYP.)
Dimensions	Length x width x height: 160 mm x 162 mm x 26 mm
Weight	Approx. 250g
Operating environment	Temperature: +10 to 40°C Humidity: 10 to 80% RH (no condensation)
Storage environment	Temperature: +15 to 40°C Humidity: 10 to 80% RH (no condensation)

1.4 System Configuration

The IE-70000-MC-NW-A functions as an in-circuit emulator when connected to a CPU with an on-chip DCU.

An interface board (sold separately) is used for the host interface.

Figure 1-1. System Configuration Diagram



	Item	Product Name	Remark
(1)	In-circuit emulator	IE-70000-MC-NW-A	This product
(2)	Power supply unit	IE-70000-MC-PS-B	+5 V, 5 A power supply unit
(3)	Interface board ^{Note 1}	IE-70000-PCI-IF(-A) IE-70000-PC-IF-C IE-70000-CD-IF(-A) IE-70000-98-IF-C	PCI bus interface board Interface board for IBM PC/AT compatibles ISA bus PCMCIA interface card Interface board for PC-9800 series C bus ^{Note 3}
(4)	ROM probe ^{Note 2}	EP-16000C EP-16384C	278000/2716000 type ROM probe 274096 type ROM probe
(5)	Target board	-	Board prepared by user
(6)	Debugger	ID703000-NW	Integrated debugger

Notes 1. Choose one of the interface boards shown above.

2. ROM probes are sold singly.

3. Excluding PC98-NX series

1.5 Installation

This section explains the component names of the IE-70000-MC-NW-A, its appearance, and how to install it.

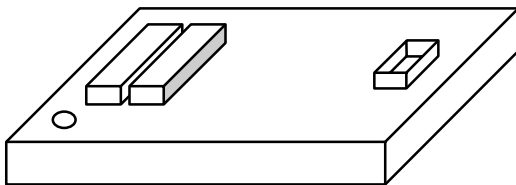
1.5.1 Package contents

This product includes the items listed below. Check that these items are included in the product package.

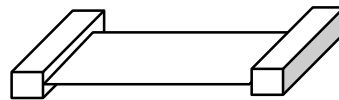
(1) IE-70000-MC-NW-A unit	1
(2) IE connection cable	1
(3) Host interface cable	1
(4) User's manual	1 (This manual)
(5) Guarantee	1
(6) Data sheet	1
(7) Operating precautions	1

Figure 1-2. Package Components

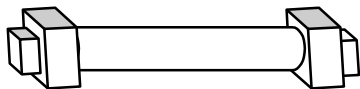
(1) IE-70000-MC-NW-A



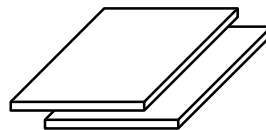
(2) IE connector cable (26 pins)



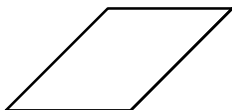
(3) Host interface cable (36 pins)



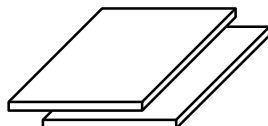
(4) User's manual



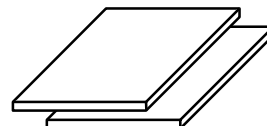
(5) Guarantee



(6) Data sheet



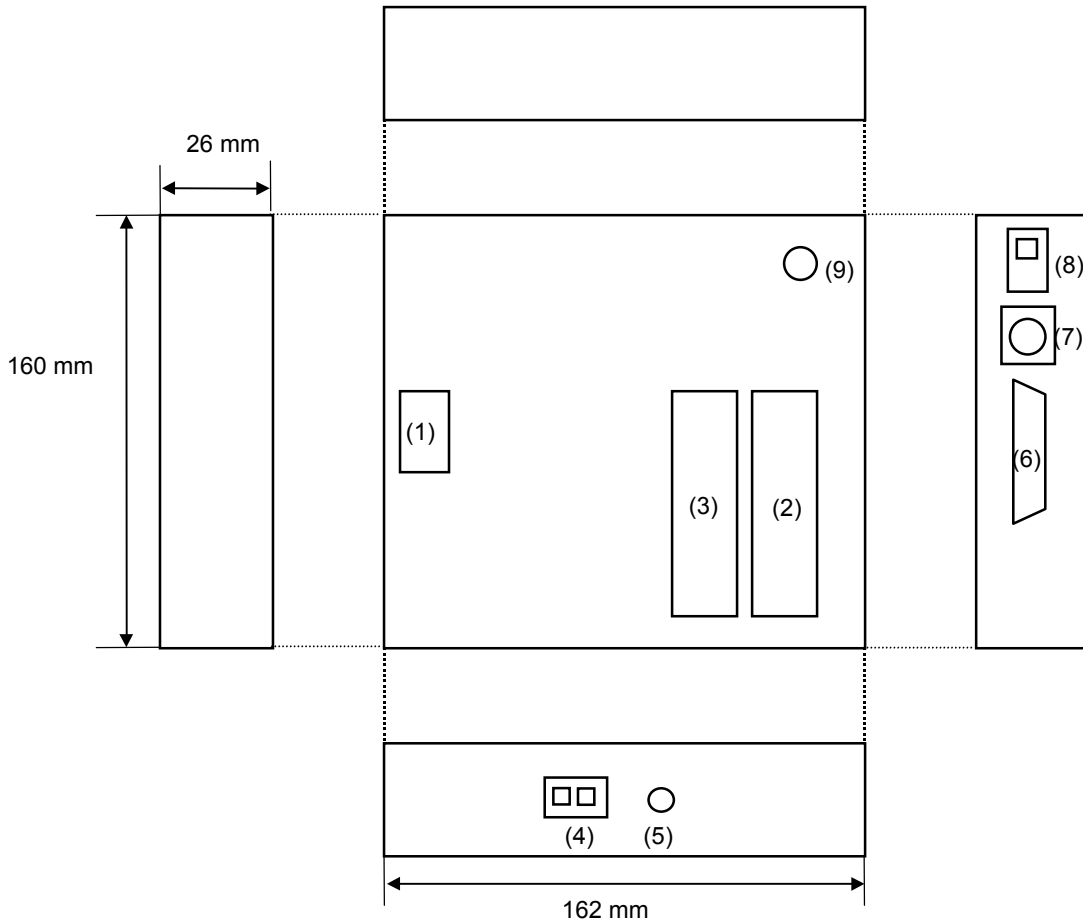
(7) Operating precautions



1.5.2 Appearance and part names

This section explains the part names of the IE-70000-MC-NW-A and its appearance.

Figure 1-3. Appearance of IE-70000-MC-NW-A



(1) IE connector (KEL 8830E-026-170S/L)

Connects to the IE connector cable.

(2) ROM 2 probe connector (compatible with 42-pin DIP package)

When configuring a 32-bit bus using two ROMs, connect this connector to the ROM corresponding to the high-order 16 bits using a ROM probe. When using ROM 1 for emulation, be sure to connect EP-16000C (sold separately) or EP-16384C (sold separately) to this connector.

(3) Connected to ROM 2 probe connector (compatible with 42-pin DIP package)

Connects to EP-16000C (sold separately) or EP-16384C (sold separately).

When configuring a 32-bit bus using two ROMs, connect this connector to the ROM corresponding to the higher 16 bits using a ROM probe

(4) ROM mode DIP switch

Specifies whether ROM 1 probe connector and ROM 2 probe connector are “used” or “not used.”

The factory preset is that both ROM 1 probe connector and ROM 2 probe connector are set to “not used.”

(5) Reset switch

This is a test switch used in the IE-70000-MC-NW-A.

Note that pressing this switch while the debugger is operating may cause the debugger to malfunction.

(6) Host interface connector (36 pins)

Connects to the supplied host interface cable. Follow the markings on the supplied cable when connecting it. The plug on this connector has fixing screws.

When the IE-70000-CD-IF(-A) is connected, use the cable supplied with the IE-70000-CD-IF(-A).

(7) +5 V power supply jack

Connect the +5 V DC plug of the separately available power supply unit (IE-70000-MC-PS-B).

(8) Power supply switch

Turns the power to the IE-70000-MC-NW-A on and off.

(9) Power indicator LED

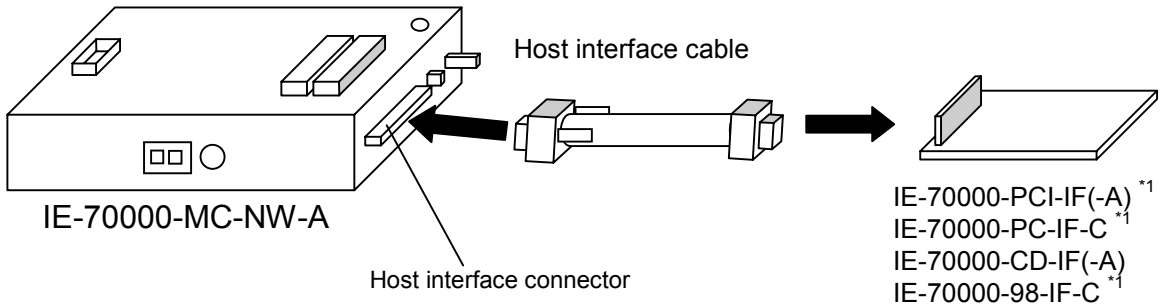
Lights green when power is supplied to the IE-70000-MC-NW-A.

1.5.3 Connection

This section explains how to connect the IE-70000-MC-NW-A.

(1) Connection to host interface device

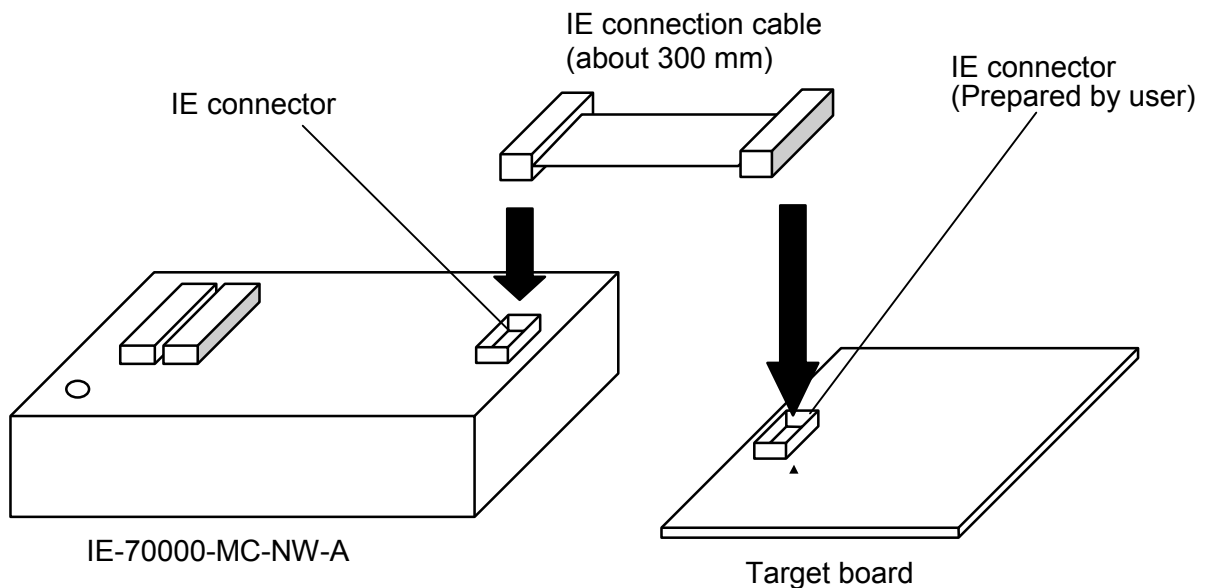
Figure 1-4. Connection to Host Interface Board



*1 Connect host interface cable to “CH0” connector of IE-70000-98-IF-C/IE-70000-PC-IF-C/IE-70000-PCI-IF-A.

(2) Connection to target board

Figure 1-5. Connection to Target Board



(3) Connection to ROM on target board

Figure 1-6 shows how to connect the IE-70000-MC-NW-A when one ROM is used and Figure 1-7 shows when two ROMs are used.

Figure 1-6. Connection to ROM on Target Board (One ROM)

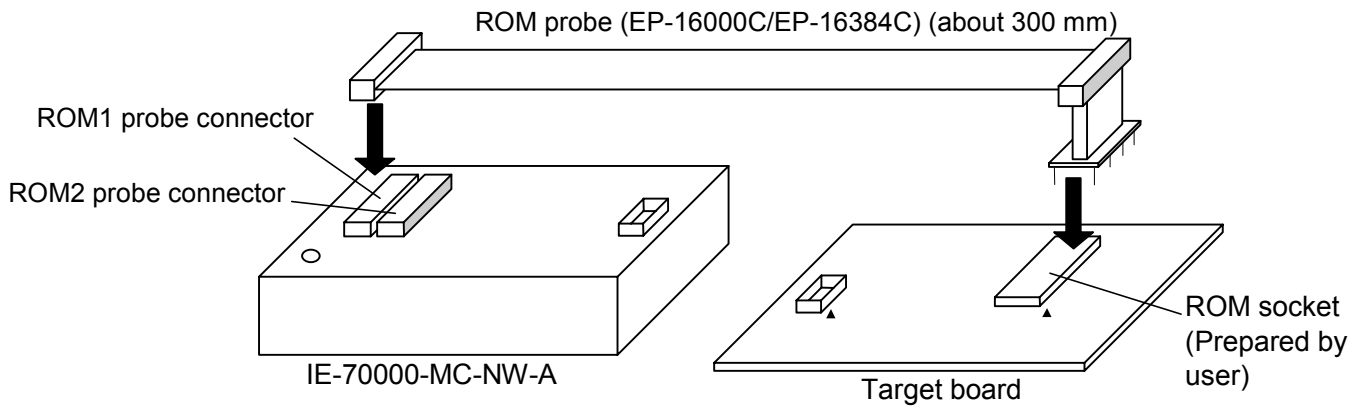
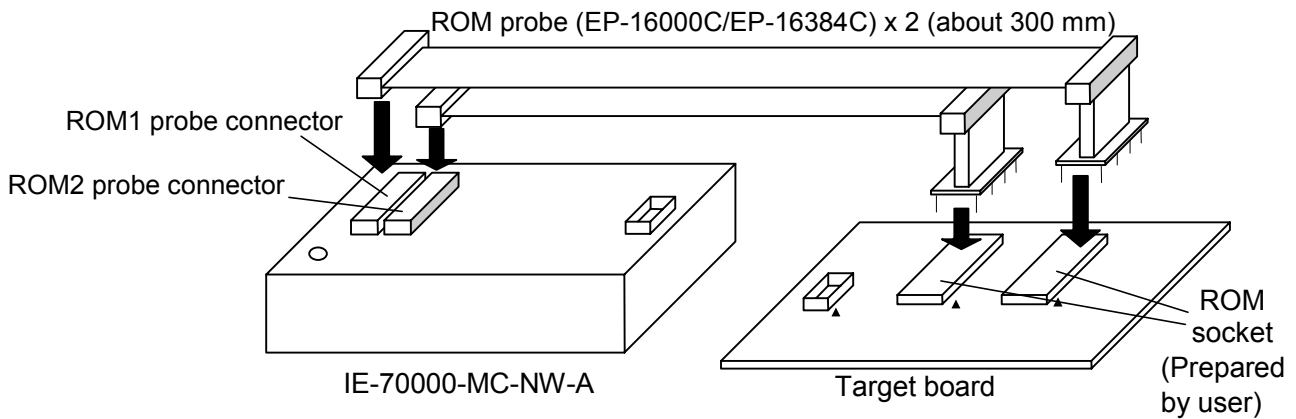
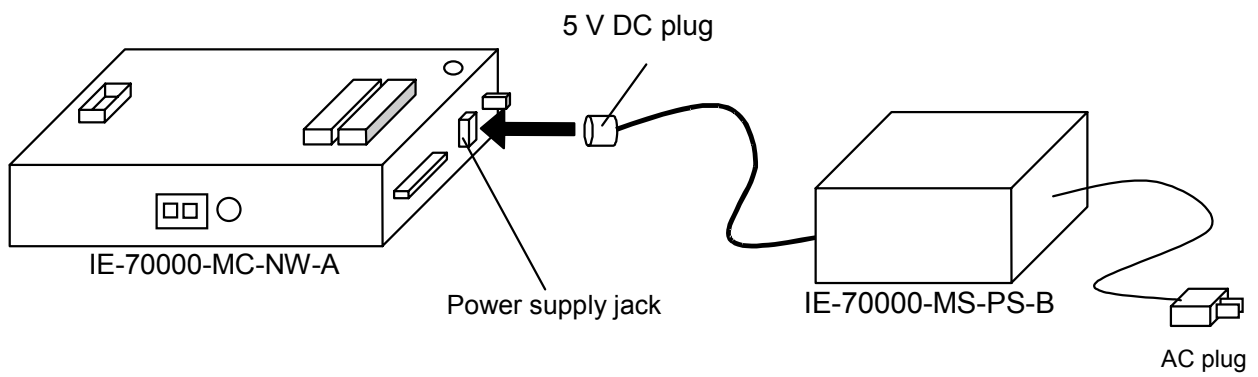


Figure 1-7. Connection to ROM on Target Board (Two ROMs)



(4) Connection to power supply (IE-70000-MS-PS-B)

Figure 1-8. Connection to Power Supply (IE-70000-MS-PS-B)






1.5.4 Settings

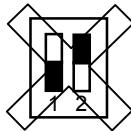
Before using the ROM emulation function of the IE-70000-MC-NW-A, you need to change the settings of the ROM mode DIP switches.

When using only one ROM for emulation, use the ROM 1 probe connector. The size of the ROM used is automatically detected when you change the ROM probe.

Figure 1-9. ROM Mode DIP Switch Settings

Use	ROM Mode DIP Switch Settings		
	SW1	SW2	Status
When not using ROM emulation function (Factory presets)	OFF	OFF	
When using ROM 1 probe connector	ON	OFF	
When using both ROM 1 and ROM 2 probe connectors	ON	ON	

Caution The setting SW1: OFF, SW2: ON is prohibited.



1.5.5 Startup and shut-down

After you have completed connecting the IE-70000-MC-NM-A to the other debug device components, follow the steps below for startup and shut-down.

A dedicated debugger is required for actual operation.

(1) Startup procedure

- <1> Turn on power supply to the host system (personal computer).
- <2> Turn on power supply to the IE-70000-MC-NW-A.
- <3> Turn on power supply to the target board.
- <4> Start the debugger.

(2) Shut-down procedure

- <1> Shut-down the debugger
- <2> Turn off power supply to target board.
- <3> Turn off power supply to the IE-70000-MC-NW-A.
- <4> Turn off power to the host system (personal computer).

CHAPTER 2 CAUTIONS ON DESIGN OF TARGET BOARD HARDWARE

A circuit is needed to connect the IE-70000-MC-NW-A to the target board in order to perform debugging. This section explains the circuit for connecting the IE-70000-MC-NW-A and applicable cautions.

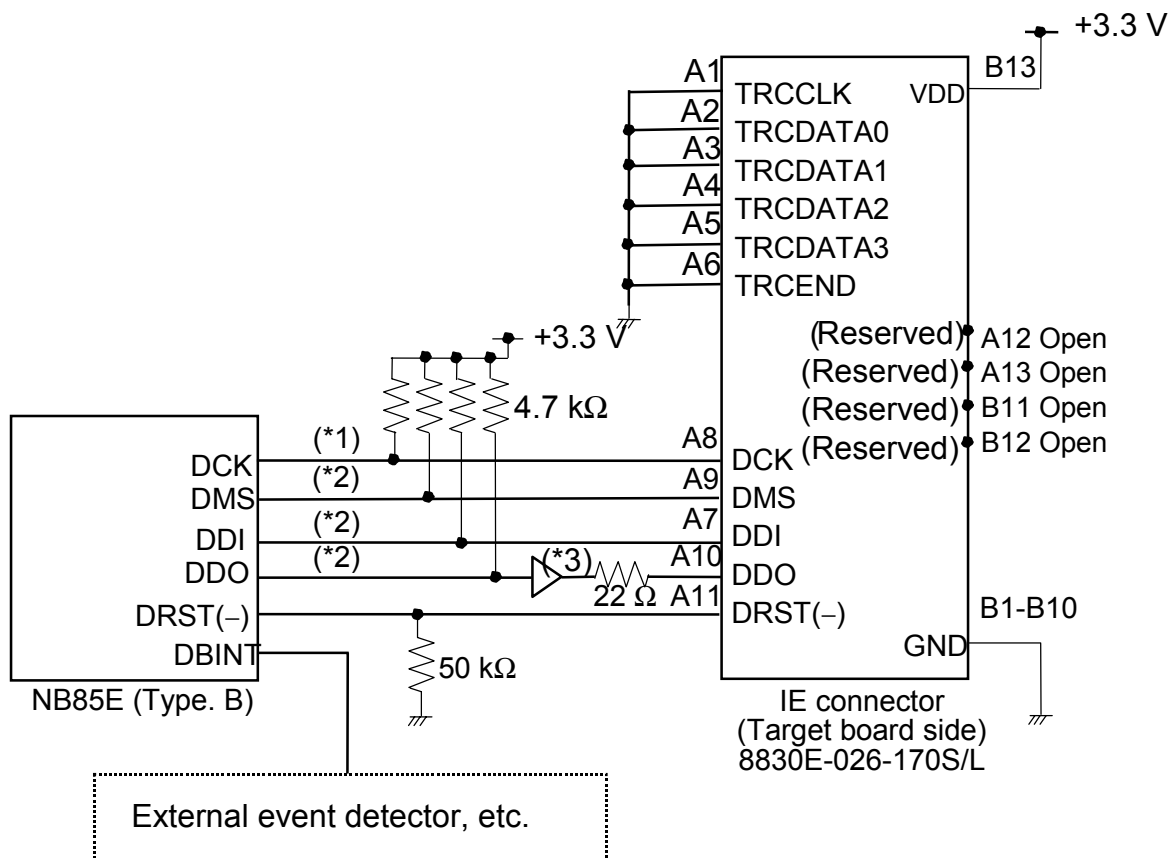
2.1 IE Connector Section (Target Side)

The diagram below shows an example of a recommended circuit for the target board required to connect the CPU and IE-70000-MC-NW-A as well as the IE connector pin layout (on the target board side).

2.1.1 Example of recommended circuit when using NB85E Type.B core

Figure 2-1 shows an example of a recommended circuit for the IE connector section (on the target board side).

Figure 2-1. Example of Recommended Circuit Connection (NB85E Type.B)



(*1): Clock pattern length should be kept to a minimum and surrounded with GNDs to shield it. Ensure that the pattern length does not exceed 100 mm.

(*2): Use the minimum pattern length possible. Ensure that the pattern length does not exceed 100 mm.

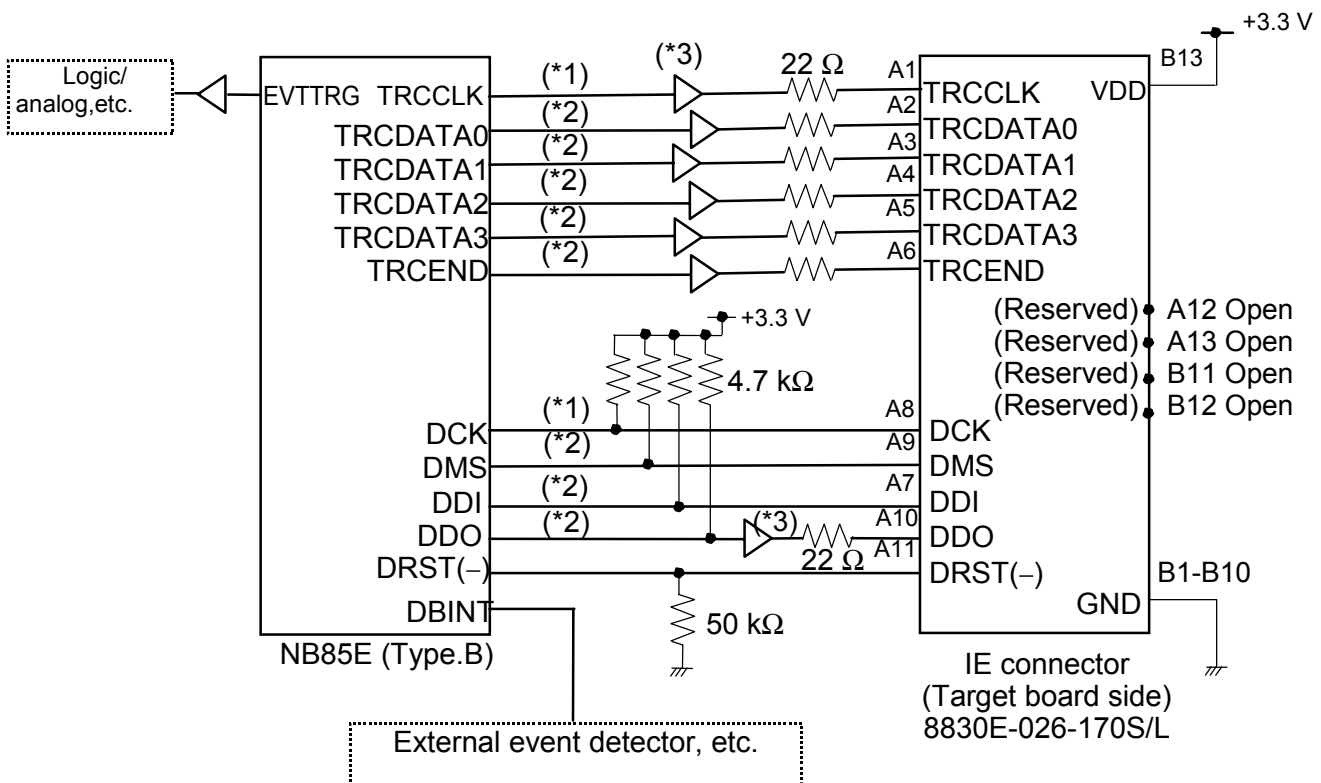
(*3): 3.3 V buffer. Recommended product: TI-manufactured SN74LVC541A and Toshiba-manufactured TC74LCX541F

- Remarks 1.** VDD (pin B13) of the IE connector (on the target board side) is used only to detect whether or not the power supply to the target board is on.
- 2.** The DBINT pin is optional. There is no need to prepare this as an external pin if external input of debug interrupts is unnecessary.

2.1.2 Example of recommended circuit When using NB85E Type.C core

Figure 2-2 shows an example of a recommended circuit for the IE connector section (on the target board side).

Figure 2-2. Example of Recommended Circuit Connection (NB85E Type.C)



- (*1): Clock pattern length should be kept to a minimum and surrounded with GNDs to shield it. Ensure that the pattern length does not exceed 100 mm.
- (*2): Use the minimum pattern length possible. Ensure that the pattern length does not exceed 100 mm.
- (*3): 3.3 V buffer. Recommended products: TI-manufactured SN74LVC541A and Toshiba-manufactured TC74LCX541F

- Remarks 1.** VDD (pin B13) of the IE connector (on the target board side) is used only to detect whether or not the power supply to the target board is on.
- 2.** The DBINT pin is optional. There is no need to prepare this as an external pin if external input of debug interrupts is unnecessary.

3. The EVTTRG pin is optional. It is used primarily for trigger output of test devices such as logic/analog devices. There is no need to prepare this as an external pin if trigger output is unnecessary.

2.1.3 IE connector (target board side)

Table 2-1 shows the pin functions and Figure 2-3 shows the pin layout of the IE connector.

Recommended connectors:

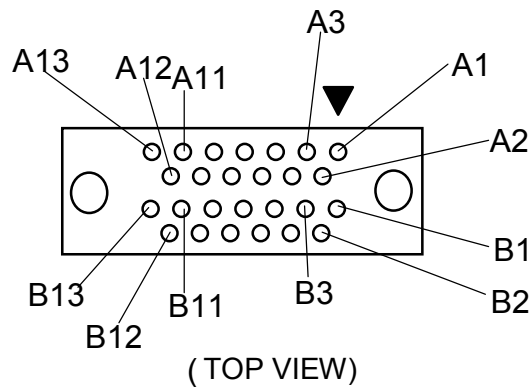
KEL-manufactured 8830E-026-170S: 26-pin straight type

KEL-manufactured 8830E-026-170L: 26-pin right-angle type

Table 2-1. Pin Functions of IE Connector (on Target Board Side)

Pin No.	Signal	I/O	Pin Function/Status
A1	TRCCLK	O	Trace logic output
A2	TRCDATA[0]	O	Trace data 0 output
A3	TRCDATA[1]	O	Trace data 1 output
A4	TRCDATA[2]	O	Trace data 2 output
A5	TRCDATA[3]	O	Trace data 3 output
A6	TRCEND	O	Trace data end output
A7	DDI	I	Data input for debug serial interface
A8	DCK	I	Clock input for debug serial interface
A9	DMS	I	Transfer mode selection input for debug serial interface
A10	DDO	O	Data output for debug serial interface
A11	DRST(-)	I	DCU reset input
A12	(Reserved)	-	Leave open
A13	(Reserved)	-	Leave open
B1	GND	-	-
B2	GND	-	-
B3	GND	-	-
B4	GND	-	-
B5	GND	-	-
B6	GND	-	-
B7	GND	-	-
B8	GND	-	-
B9	GND	-	-
B10	GND	-	-
B11	(Reserved)	-	Leave open
B12	(Reserved)	-	Leave open
B13	VDD	-	+3.3 V input (for monitoring power supply to target)

Figure 2-3. Pin Layout of IE Connector (on Target Board Side)



2.2 Target ROM Section

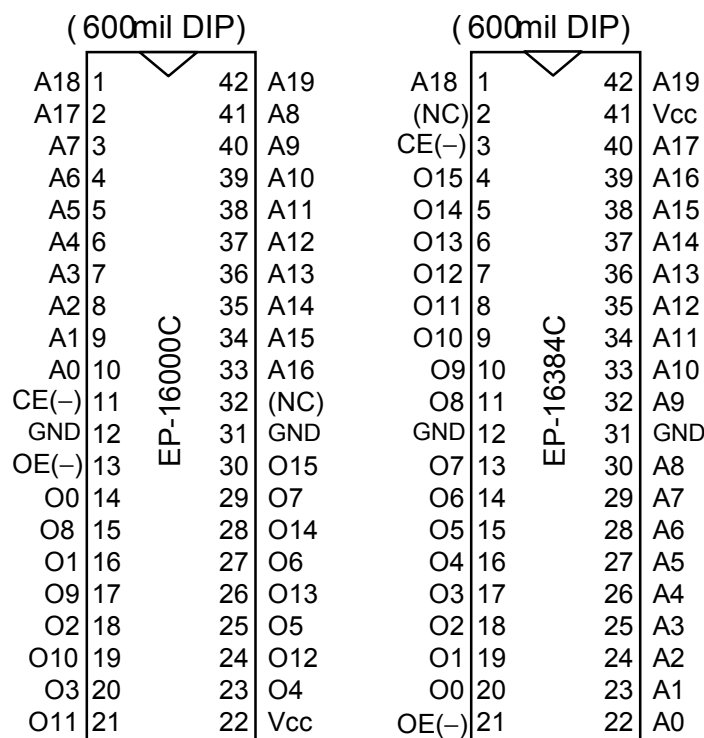
This section explains cautions that apply to the pin layout of the ROM probe (sold separately) and when connecting the ROM on the target board and the IE-70000-MC-NW-A using a ROM probe.

2.2.1 Target ROM connector

Figure 2-4 shows the pin layout of the target ROM probe (sold separately).

IE-70000-MC-NW-A compatible ROM probes support two types of ROM probe pin layout (product name: EP-16000C/product name: EP-16384C).

Figure 2-4. ROM Probe (EP-16000C/EP-16384C) Pin Layout



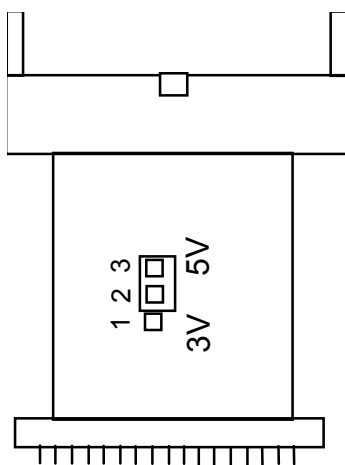
- Remarks**
1. EP-16000C pin layout is equivalent to that of the 27C4000, 27C8000, and 27C16000. Pin 32 is a (NC) pin.
 2. EP-16384C pin layout is the equivalent to the 27C4096 pin layout from pin 2 to pin 41. Bear in mind that pin 2 is a (NC) pin. Pin 1 and pin 42 layout are unique to EP-16384C.

2.2.2 ROM probe setting

Figure 2-5 shows the ROM probe jumper voltage settings.

The ROM probe supports 3.3 V and 5 V ROMs. Therefore, it is necessary to set the jumpers in line with the voltage of the ROM on the user's target board.

Figure 2-5. ROM Probe Voltage Settings (EP-16000C/EP-16384C)



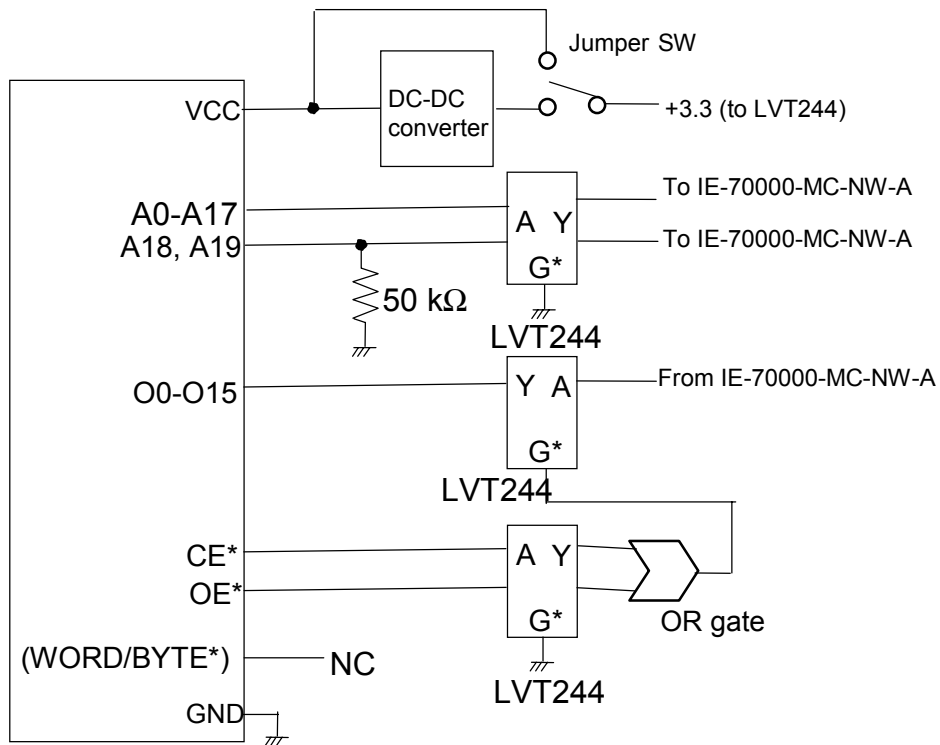
Connecting 1 and 2: Target ROM voltage is 3.3 V.

Connecting 2 and 3: Target ROM voltage 5 V. (Setting at time of shipment.)

2.2.3 ROM probe interface circuit

The ROM probe interface circuit is shown in Figure 2-6. There are some cautions related to setting the target board that must be observed when using the ROM probe.

Figure 2-6. Overview of ROM Probe Interface Circuit



EP-16000C/EP-16384C ROM socket section (42-pin DIP)

- Cautions**
1. Unlike when connecting to an actual ROM, the load on the target board bus may increase by connecting the ROM probe. This should be taken into account when designing the target board bus. We recommend a bus buffer be placed in the ROM section of the target board if possible.
 2. A18 and A19 are pulled down (50 kΩ) in the ROM probe. Therefore, treat A18 and A19 as NC on the target board if they are not used.
 3. Ensure that the ROM size on the target board is the same as the size of the ROM space set with the debugger's mapping command when using ROM emulation. If it is not the same, emulation memory cannot be read from the CPU with the correct address.
 4. CPU cannot write any data to ROM emulation memory.
 5. ROM emulation memory access time is 60 ns. Use this device after setting the number of CPU waits to an appropriate figure.

APPENDIX A

SETTING THE INTERFACE BOARD FOR PCI BUS (IE-70000-PCI-IF-A)

This attachment explains how to set the IE-70000-PCI-IF-A when connecting the IE-70000-MC-NW-A.

For details, refer to the IE-70000-PCI-IF-A User's Manual.

A.1 General Information

The interface board for PCI bus (IE-70000-PCI-IF-A) designed to be mounted in the PCI bus slot of PCs with a Windows 95, Windows 98, Windows NT 4.0, or Windows 2000.

The following items are included with this board. Check that these items are included in the product package.

• IE-70000-PCI-IF-A	1
• 8-bit connector board (mounted on the IE-70000-PCI-IF-A board)	1
• 32-bit connector board	1
• User's manual	1
• DLL-DISK	1
• DRV-DISK	1

<Basic specifications>

Target computers

PCs with a PCI bus slot

Target OSs

Windows 95, Windows 98, Windows NT 4.0, and 2000

Hardware resources employed

- I/O address ...0000H to FFFFH
- Interrupt ... Unused
- Memory ... 80H-byte used

Power consumption

300 mA (Max. at +5V)

A.2 Installation Method

(1) Board settings

This product does not have any jumpers or switches.

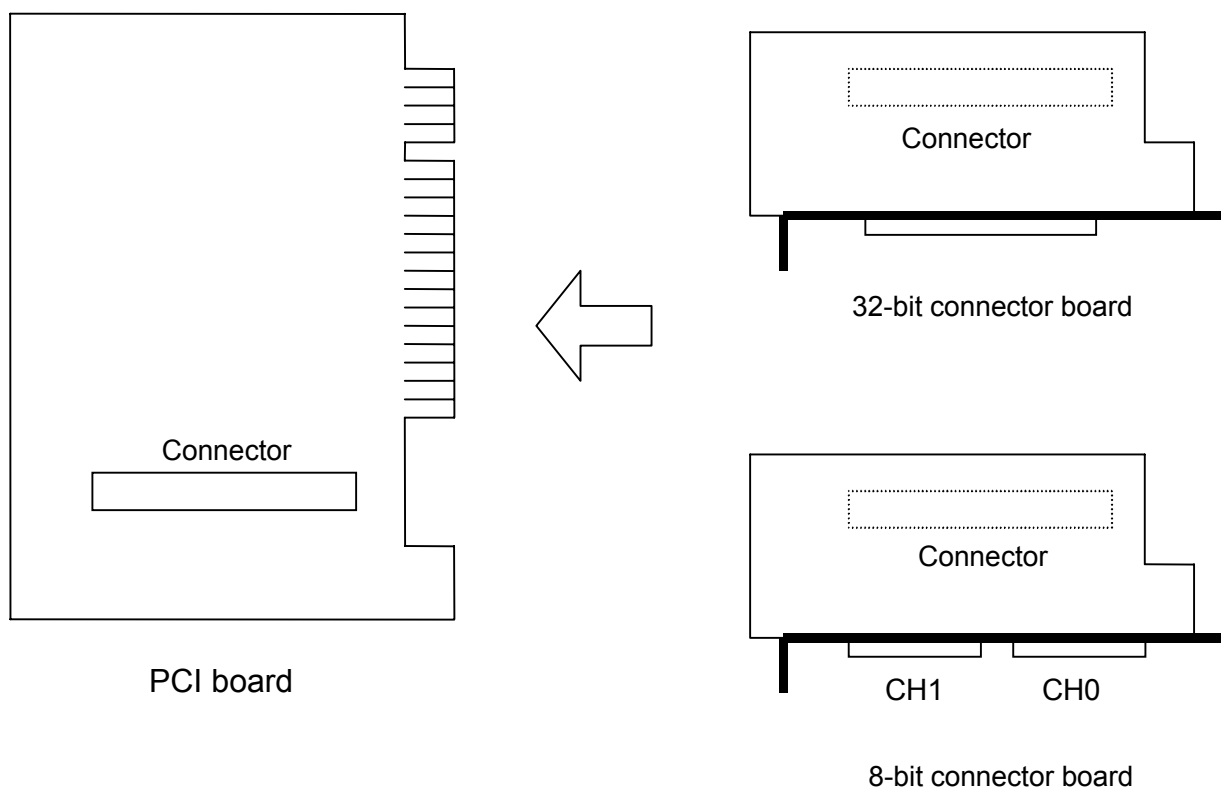
(2) Installing the 8-bit connector board

This product is shipped with an 8-bit connector board. If the product you have purchased shipped with a 32-bit connector board pre-installed, align the 8-bit connector board on top of it and mount it with the connector on the board. (See Figure A-1.)

After aligning the boards, firmly secure in place with the screws.

Caution The 32-bit connector board is included to facilitate future function expansion. Please store it in a secure place for use when needed.

Figure A-1. Overview of Board Connection



(3) Installing in a PC

Confirm that the power supply is disconnected from the PC and then install the board in the PCI bus slot in accordance with the user's manual of the PC.

(4) Installing the PCI driver

Install the driver by referencing to the Readme_e.txt on the IE-PC Driver DISK.

(5) Connecting the IE-70000-MC-NW-A

Connect the IE-70000-MC-NW-A to CH0 of the IE-70000-PCI-IF-A using the cable included with the product.

Caution IE-70000-MC-NW-A can only be connected to CH0.

APPENDIX B

SETTING THE INTERFACE CARD FOR PCMCIA (IE-70000-CD-IF-A)

This attachment explains how to set the IE-70000-CD-IF-A when connecting the IE-70000-MC-NW-A.

For details, refer to the IE-70000-CD-IF-A User's Manual.

B.1 General Information

The PCMCIA interface card (IE-70000-CD-IF-A) is designed to be mounted in a PC card slot conforming to the PCMCIA2.1/JEIDA Ver.4.2 standard in a PC with Windows 95, Windows 98, Windows NT 4.0, or Windows 2000 installed.

- IE-70000-CD-IF-A 1
- MC-A cable 1
- NS-A cable 1
- User's manual 1
- DLL-DISK 1
- IE-PC Driver DISK 1

<Basic specifications>

Target computers

PCs with a PC card slot conforming to the PCMCIA2.1/JEIDA Ver.4.2 standard

Target OSs

Windows 95, 98, Windows NT 4.0, and Windows 2000

Hardware resources employed

- I/O address ... 100H to 3FFH (*1)
- Interrupts, etc. ... Unused

(*1) Only 20H bytes with base address 220H, 260H, 2E0H, 320H or 3E0H.

Power consumption

300 mA (Max. at +5V)

B.2 Installation Method

This section explains the overall installation procedure when using Windows 9x.

For a more detailed explanation, or if using another OS, refer to the file Readme_e.txt on the IE-PC Driver DISK.

(1) Installing the card in the computer

Insert the IE-70000-CD-IF-A in the card slot while the PC is on (Windows 95, Windows 98, and Windows 2000 only.)

Insert the IE-70000-CD-IF-A in the card slot while the PC is turned off if using Windows NT 4.0.

Be careful to insert the card in the correct orientation.

(2) Installing the IE-PC driver

Install the driver by referencing to the Readme_e.txt on the IE-PC Driver DISK.

(3) Connecting the IE-70000-MC-NW-A

Connect the IE-70000-MC-NW-A to CH0 of the IE-70000-CD-IF-A using the cable included with the product.

APPENDIX C

SETTING THE INTERFACE BOARD FOR IBM PC/AT COMPATIBLE COMPUTERS ISA BUS (IE-70000-PC-IF-C)

This attachment explains how to set the IE-70000-PC-IF-C when connecting the IE-70000-MC-NW-A.

For details, refer to the IE-70000-PC-IF-C User's Manual.

C.1 General Information

The interface board for the ISA bus in IBM PC/AT-compatible computers (IE-70000-PC-IF-C) is designed to be mounted in the IBM PC/AT compatible ISA bus slot.

The following item is included with this board. Check that this item is included in the product package.

- IE-70000-PC-IF-C 1
- User's manual 1
- DLL-DISK 1
- IE-PC Driver DISK 1

<Basic specifications>

Target computers

IBM PC/AT compatible computers with a built-in ISA bus

Target OSs

Windows 95, Windows 98, Windows NT 4.0, and 2000

Hardware resources employed

- I/O address ... Any 16-bytes within an 16-byte boundary (020XH to 03FXH)
- Interrupts, etc. ... Unused

Power consumption

500 mA (Max. at +5V)

C.2 Installation Method

(1) Setting I/O addresses

SW1 and SW2 are the ISA bus I/O address selection switches. Numbers 1 to 8 of SW1 correspond to ISA bus addresses A4 to A11. Numbers 1 to 4 of SW2 correspond to ISA bus addresses A12 to A15.

Set 020XH to 03FXH for the IE-70000-MC-NW-A. A switch is turned on with a value of “0” and off with a value of “1.”

The addresses set here must be values that are not used with the PC system or other boards. Ensure that these values are recorded because they will be employed later with software installation.

The following tables show examples of I/O addresses as well as SW1 and SW2 settings.

Table C-1. SW1 and SW2 Settings When I/O Address Is Set to 020XH

SW1 #	1	2	3	4	5	6	7	8
Address	A4	A5	A6	A7	A8	A9	A10	A11
ON	0	0	0	0	0		0	0
OFF						1		

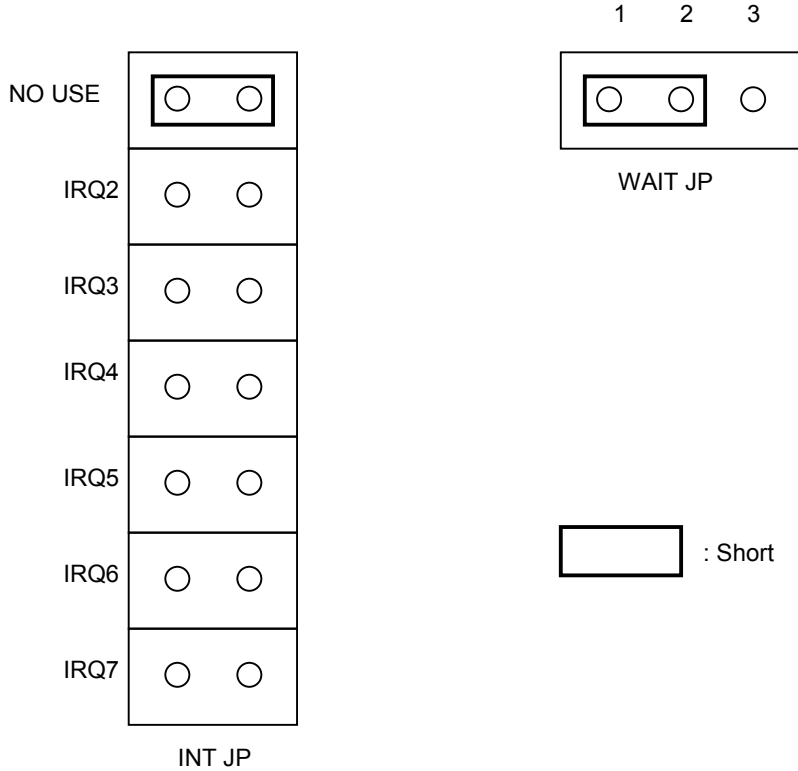
SW2 #	1	2	3	4	5	6	7	8
Address	A12	A13	A14	A15	OFF	OFF	ON	OFF
ON	0	0	0	0			0	
OFF					1	1		1

Caution Use this device with SW2 No.7 set ON, on No.5, 6, and 8 set OFF.

(2) Jumper settings

INT JP and WAIT JP are the ISA bus interrupt selection and WAIT selection jumpers. Use the IE-70000-MC-NW-A after setting INT JP to NO USE and WAIT JP to 1-2 short.

Figure C-1. Setting INT JP and WAIT JP



(3) Installing in a PC

Confirm that the power supply is disconnected from the PC and then install the board in the ISA bus slot in accordance with the user's manual of the PC.

(4) Installing the PC driver

Install the PC driver by referencing to the Readme_e.txt on the IE-PC Driver DISK.

(5) Connecting the IE-70000-MC-NW-A

Connect the IE-70000-MC-NW-A to CH0 of the IE-70000-PC-IF-C using the cable included with the product.

Caution IE-70000-MC-NW-A can only be connected to CH0.

APPENDIX D

SETTING THE INTERFACE BOARD FOR PC-9800 SERIES (EXCEPT PC98-NX) (IE-70000-98-IF-C)

This attachment explains how to set the IE-70000-98-IF-C when connecting the IE-70000-MC-NW-A.

For details, refer to the IE-70000-98-IF-C User's Manual.

D.1 General Information

The interface board (IE-70000-98-IF-C) for PC-9800 Series computers (except PC98-NX) is designed to be mounted in the PC-9800 Series (except PC98-NX) C bus slot.

The following item is included with this board. Check that this item is included in the product package.

- | | |
|---------------------|---|
| • IE-70000-98-IF-C | 1 |
| • User's manual | 1 |
| • DLL-DISK | 1 |
| • IE-PC Driver DISK | 1 |

<Basic specifications>

Target computers

PC-9800 Series computers (Except PC98-NX) with a built-in C bus

Target OSs

Windows 95, Windows 98, Windows NT4.0, and 2000

Hardware resources employed

- I/O address ... Any 16-bytes within an 256-byte boundary
(00DXH, 01DXH, ... FFDXH)
- Interrupts, etc. ... Unused

Power consumption

500 mA (Max. at +5V)

D.2 Installation Method

(1) Setting I/O addresses

SW1 and SW2 are the C bus I/O address selection switches. Numbers 1 to 8 of SW1 correspond to C bus addresses A4 to A11. Numbers 1 to 4 of SW2 correspond to C bus addresses A12 to A15.

Set 16-bytes from 00DXH, 01DXH, ... FFDXH for the IE-70000-MC-NW-A. A switch is turned on with a value of “0” and off with a value of “1.”

The addresses set here must be values that are not used with the PC system or other boards. Ensure that these values are recorded because they will be employed later with software installation.

The following tables show examples of I/O addresses as well as SW1 and SW2 settings.

Table D-1. SW1 and SW2 Settings When I/O Address is Set to 01DXH

SW1 #	1	2	3	4	5	6	7	8
Address	A4	A5	A6	A7	A8	A9	A10	A11
ON		0				0	0	0
OFF	1		1	1	1			

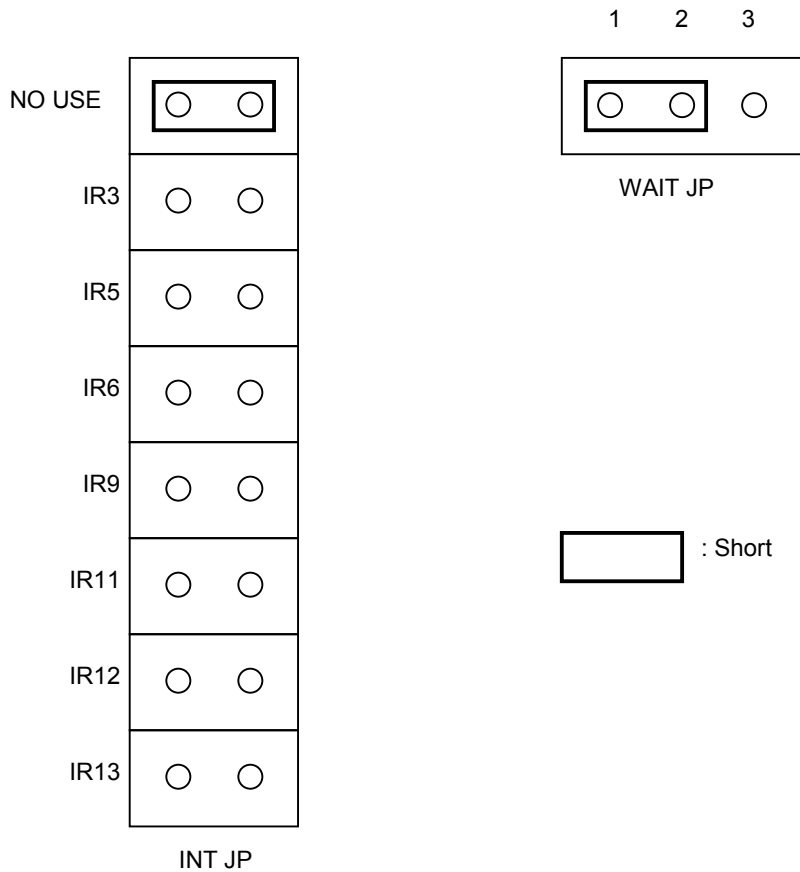
SW2 #	1	2	3	4	5	6	7	8
Address	A12	A13	A14	A15	OFF	OFF	ON	OFF
ON	0	0	0	0			0	
OFF					1	1		1

Caution Use this device with SW2 No.7 set ON, on No.5, 6, and 8 set OFF.

(2) Jumper Settings

INT JP and WAIT JP are the C bus interrupt selection and WAIT selection jumpers. Use the IE-70000-MC-NW-A after setting INT JP to NO USE and WAIT JP to 1-2 short.

Figure D-1. Setting INT JP and WAIT JP



(3) Installing in a PC

Confirm that the power supply is disconnected from the PC and then install the board in the C bus slot in accordance with the user's manual of the PC.

(4) Installing the PC driver

Install the PC driver by referencing to the Readme_e.txt on the IE-PC Driver DISK.

(5) Connecting the IE-70000-MC-NW-A

Connect the IE-70000-MC-NW-A to CH0 of the IE-70000-98-IF-C using the cable included with the product.

Caution The IE-70000-MC-NW-A can only be connected to CH0.