NEC

User's Manual

IE-V850ES-G1

In-Circuit Emulator

Target Device V850ES

Document No. U16313EJ1V0UM00 (1st edition) Date Published March 2003 N CP(K)

© NEC Electronics Corporation 2003 Printed in Japan [MEMO]

V850ES/SA2, V850ES/SA3, V850ES/KF1, V850ES/KG1, and V850ES/KJ1 are trademarks of NEC Electronics Corporation.

Windows is either a trademark or a registered trademark of Microsoft Corporation in the United States and/or other countries.

PC/AT is a trademark of International Business Machines Corporation.

Caution

This equipment is intended for indoor use only. Before connecting the equipment to AC-mains the casing must be closed.



- The information in this document is current as of November, 2002. The information is subject to change without notice. For actual design-in, refer to the latest publications of NEC Electronics data sheets or data books, etc., for the most up-to-date specifications of NEC Electronics products. Not all products and/or types are available in every country. Please check with an NEC Electronics sales representative for availability and additional information.
- No part of this document may be copied or reproduced in any form or by any means without the prior written consent of NEC Electronics. NEC Electronics assumes no responsibility for any errors that may appear in this document.
- NEC Electronics does not assume any liability for infringement of patents, copyrights or other intellectual property rights of third parties by or arising from the use of NEC Electronics products listed in this document or any other liability arising from the use of such products. No license, express, implied or otherwise, is granted under any patents, copyrights or other intellectual property rights of NEC Electronics or others.
- Descriptions of circuits, software and other related information in this document are provided for illustrative purposes in semiconductor product operation and application examples. The incorporation of these circuits, software and information in the design of a customer's equipment shall be done under the full responsibility of the customer. NEC Electronics assumes no responsibility for any losses incurred by customers or third parties arising from the use of these circuits, software and information.
- While NEC Electronics endeavors to enhance the quality, reliability and safety of NEC Electronics products, customers agree and acknowledge that the possibility of defects thereof cannot be eliminated entirely. To minimize risks of damage to property or injury (including death) to persons arising from defects in NEC Electronics products, customers must incorporate sufficient safety measures in their design, such as redundancy, fire-containment and anti-failure features.
- NEC Electronics products are classified into the following three quality grades: "Standard", "Special" and "Specific".

The "Specific" quality grade applies only to NEC Electronics products developed based on a customerdesignated "quality assurance program" for a specific application. The recommended applications of an NEC Electronics product depend on its quality grade, as indicated below. Customers must check the quality grade of each NEC Electronics product before using it in a particular application.

- "Standard": Computers, office equipment, communications equipment, test and measurement equipment, audio and visual equipment, home electronic appliances, machine tools, personal electronic equipment and industrial robots.
- "Special": Transportation equipment (automobiles, trains, ships, etc.), traffic control systems, anti-disaster systems, anti-crime systems, safety equipment and medical equipment (not specifically designed for life support).
- "Specific": Aircraft, aerospace equipment, submersible repeaters, nuclear reactor control systems, life support systems and medical equipment for life support, etc.

The quality grade of NEC Electronics products is "Standard" unless otherwise expressly specified in NEC Electronics data sheets or data books, etc. If customers wish to use NEC Electronics products in applications not intended by NEC Electronics, they must contact an NEC Electronics sales representative in advance to determine NEC Electronics' willingness to support a given application.

(Note)

- (1) "NEC Electronics" as used in this statement means NEC Electronics Corporation and also includes its majority-owned subsidiaries.
- (2) "NEC Electronics products" means any product developed or manufactured by or for NEC Electronics (as defined above).

Regional Information

Some information contained in this document may vary from country to country. Before using any NEC Electronics product in your application, please contact the NEC Electronics office in your country to obtain a list of authorized representatives and distributors. They will verify:

- · Device availability
- Ordering information
- Product release schedule
- Availability of related technical literature
- Development environment specifications (for example, specifications for third-party tools and components, host computers, power plugs, AC supply voltages, and so forth)
- Network requirements

In addition, trademarks, registered trademarks, export restrictions, and other legal issues may also vary from country to country.

NEC Electronics	America, Inc.	(U.S.)	• F
-----------------	---------------	--------	-----

Santa Clara, California Tel: 408-588-6000 800-366-9782 Fax: 408-588-6130 800-729-9288

NEC Electronics (Europe) GmbH

Duesseldorf, Germany Tel: 0211-65 03 01 Fax: 0211-65 03 327

- Sucursal en España Madrid, Spain Tel: 091-504 27 87 Fax: 091-504 28 60
- Succursale Française Vélizy-Villacoublay, France Tel: 01-30-67 58 00 Fax: 01-30-67 58 99

Filiale Italiana Milano, Italy Tel: 02-66 75 41 Fax: 02-66 75 42 99

- Branch The Netherlands Eindhoven, The Netherlands Tel: 040-244 58 45 Fax: 040-244 45 80
- Tyskland Filial Taeby, Sweden Tel: 08-63 80 820 Fax: 08-63 80 388
- United Kingdom Branch Milton Keynes, UK Tel: 01908-691-133 Fax: 01908-670-290

NEC Electronics Hong Kong Ltd. Hong Kong Tel: 2886-9318 Fax: 2886-9022/9044

NEC Electronics Hong Kong Ltd. Seoul Branch Seoul, Korea Tel: 02-528-0303 Fax: 02-528-4411

NEC Electronics Shanghai, Ltd.

Shanghai, P.R. China Tel: 021-6841-1138 Fax: 021-6841-1137

NEC Electronics Taiwan Ltd. Taipei. Taiwan

Tel: 02-2719-2377 Fax: 02-2719-5951

NEC Electronics Singapore Pte. Ltd.

Novena Square, Singapore Tel: 6253-8311 Fax: 6250-3583

INTRODUCTION

Target Readers	This manual is intend using V850ES microc	led for users wh ontrollers.	ho design and develop application systems		
Purpose	Debugging can be connected to a ded application systems u The purpose of this V850ES-G1 and its ba	performed effic icated emulatio sing V850ES mi manual is to asic specification	ciently with this emulator (IE-V850ES-G1) on board when designing and developing incrocontrollers. describe the proper operation of the IE- ins.		
Organization	This manual is broadl Overview Names and function	y divided into the	e following parts.		
	 Connection of parts 				
	 Factory settings 				
How to Read This Manual	It is assumed that the reader of this manual has general knowledge in the fields of				
	electrical engineering, logic circuits, and microcontrollers.				
	To learn about the basic specifications and operation				
	\rightarrow Read this manual in the order listed in the CONTENTS .				
	\rightarrow Read the user's n	n methods, comm nanual of the de	mand functions, etc., of the IE-V850ES-G1 bugger (sold separately) that is used.		
Conventions	Note:	Footnote for ite	em marked with Note in the text		
	Caution:	Information red	quiring particular attention		
	Remark:	Supplementar	y information		
	Numeral representation	on: Bina	ary … ×××× or ××××B		
		Decimal ··· ××>	××		
	Hexadecimal ··· ××××H				
	Prefix representing a	power of 2 (add	Iress space, memory capacity):		
		K (kilo):	$2^{20} = 1024$		
		ivi (mega):	2 = 1024		

Terminology

The meanings of terms used in this manual are listed below.

Target device	This is the device to be emulated.
Target system	The system (user-built system) to be debugged. This includes the target program and hardware configured by the user.
Emulation CPU	CPU that executes the program created by the user in the emulator.

Related Documents

When using this manual, refer to the following manuals.

The related documents (user's manuals) indicated in this publication may include preliminary versions. However, preliminary versions are not marked as such.

O Documents Related to Development Tools (User's Manuals)

Document Name	Document Number	
IE-V850ES-G1 (In-Circuit Emulator for V850ES)	This manual	
IE-703204-G1-EM1 (In-Circuit Emulator Option Board for	V850ES/SA2 [™] , V850ES/SA3 [™])	To be prepared
IE-703217-G1-EM1 (In-Circuit Emulator Option Board for V850ES/KJ1™)	V850ES/KF1 [™] , V850ES/KG1 [™] ,	To be prepared
CA850 Ver.2.50 (C Compiler Package)	Operation	U16053E
	C Language	U16054E
	PM Plus	U16055E
	Assembly Language	U16042E
ID850 Ver.2.50 (Integrated Debugger)	Operation Windows [™] Based	U16217E
SM850 Ver.2.50 (System Simulator)	Operation Windows Based	U16218E
SM850 Ver. 2.00 or Later System Simulator	External Parts User Open Interface Specifications	U14873E
RX850 Ver. 3.13 or Later Real-Time OS	Basics	U13430E
	Installation	U13410E
	Technical	U13431E
RX850 Pro Ver. 3.13 Real-Time OS	Basics	U13773E
	Installation	U13774E
	Technical	U13772E
RD850 Ver.3.01 Task Debugger	U13737E	
RD850 Pro Ver.3.01 Task Debugger	U13916E	
AZ850 Ver.3.10 System Performance Analyzer		U14410E
PG-FP4 Flash Memory Programmer	U15260E	

Caution The related documents listed above are subject to change without notice. Be sure to use the latest version of each document for designing.

CONTENTS

CHAPT	ER 1	OVERVIEW	. 11		
1.1	Hard	ware Configuration	. 12		
1.2	Features1				
1.3	Func	tion Specifications	. 14		
1.4	Hard	ware Configuration	. 15		
1.5	Syste	em Configuration	. 16		
1.6	Cont	ents in Carton	. 17		
1.7	Setu	p	. 19		
	1.7.1	When using the emulator on a stand-alone basis for performing software debugging	19		
	1.7.2	When performing hardware debugging with target system	20		
СНАРТ	ER 2	PART NAMES AND FUNCTIONS	. 21		
2.1	Part	Names and Functions of IE-V850ES-G1	. 21		
2.2	Cloc	k Settings	. 24		
2.3	CPU	Operating Voltage Range	. 24		
2.4	Cove	r Open/Close Procedure	. 25		
	2.4.1	Removing probe and replacing clock module	25		
	2.4.2	Replacing board	27		
	2.4.3	Closing cover	29		
СНАРТ	ER 3	CONNECTION OF COMPONENTS	. 30		
3.1	Conr	nection to Personal Computer	. 30		
	3.1.1	Overview of connection	30		
	3.1.2	Connection procedure	30		
	3.1.3	Insertion of PC interface board	31		
	3.1.4	Connection of PC interface cable	32		
3.2	Conr	nection to Target System	. 33		
3.3	Conr	nection of External Logic Probe	. 33		
3.4	Cabl	e Connections	. 35		
	3.4.1	Connection of power supply cable	35		
	3.4.2	PC interface cable connection	36		
	3.4.3	External logic probe connection	37		
	3.4.4	Additional information	37		
3.5	Syste	em Power-on and Power-off	. 38		
	3.5.1	Power-on procedure	38		
	3.5.2	Power-off procedure	38		
СНАРТ	ER 4	FACTORY SETTINGS	. 39		
4.1	Facto	ory Settings	. 39		
APPEN	DIX A	DIMENSIONS	. 40		

LIST OF FIGURES

	4.5
I-I Basic Hardware Configuration	
1-2 System Configuration	16
1-3 Contents in Carton	17
1-4 Accessories	18
2-1 Part Names and Functions of IE-V850ES-G1 on Front Side	21
2-2 TRGOUT Signal Connector	22
2-3 Part Names and Functions of IE-V850ES-G1 on Back Side	23
2-4 Part Names and Functions of Board	24
2-5 Cover Open/Close Procedure 1 (Removing Front Cover 1)	25
2-6 Cover Open/Close Procedure 1 (After Front Cover 1 Is Removed)	26
2-7 Cover Open/Close Procedure 2 (Loosening Screws)	27
2-8 Cover Open/Close Procedure 2 (Pulling up Front Cover 2)	28
2-9 Cover Open/Close Procedure 2 (After Front Cover Is Pulled up)	29
3-1 Rear View of PC	31
3-2 Inserting PC Interface Board	31
3-3 Connection of PC Interface Board and PC Interface Cable	
3-4 Connection of External Logic Probe	
3-5 External Logic Probe Connector Pins	34
3-6 Connection of Power Supply Cable	35
3-7 PC Interface Cable Connection	36

LIST OF TABLES

Figure No. Title		Title	Page
3-1	Pins of External Logic Probe Connector		
3-2	Electrical Characteristics of External Logic Probe	Connector	34
4-1	Factory Settings of Switches		

CHAPTER 1 OVERVIEW

The IE-V850ES-G1 is an in-circuit emulator that efficiently debugs hardware and software during the development of systems that employ V850ES microcontrollers.

This in-circuit emulator incorporates functions such as a break/trace function using events, a coverage function for program performance evaluation, and a timer/counter function.

To perform debugging, the emulation board (sold separately) corresponding to the relevant device must be connected.

1.1 Hardware Configuration

	Separately sold hardware
Emulation board (IE-70xxxx-G1-EM1)	The IE-V850ES-G1 can be used as an in-circuit emulator of each V850ES device by connecting this board. A probe cable is supplied with the board (except some emulation boards).
Probe socket (EV-70xxxxXXxx)	Deducated probe socket
PC interface board [IE-70000-CD-IF-A IE-70000-PCI-IF-A]	These boards are used to connect the IE-V850ES- G1 to a personal computer. These boards are added into the expansion slot of a personal computer. IE-70000-PCI-IF-A: For PCI bus IE-70000-CD-IE-A: For PCMCIA socket

1.2 Features

- O Maximum operating frequency: 20 MHz
- O A configuration that provides the highest possible equivalence with the target device is realized by omitting buffers between signal lines.
- O The following pins can be masked (although these differ depending on the emulation board to be used). RESET, NMI, WAIT, HLDRQ
- O The dimensions and environmental conditions for operation are as follows.

Parameter		Value	
Maximum operating frequency		20 MHz	
Supply voltage		AC 100 to 240 V	
Power consumption		50 W (max.)	
External dimensions	Height	210 mm	
(Refer to APPENDIX A DIMENSIONS)	Width	105 mm	
	Depth	249 mm	
Weight		2400 g	
Operating temperature range		0 to 40°C	
Storage temperature range		0 to 45°C	
Ambient humidity range		10 to 80% RH	

1.3 Function Specifications

Item			Specification
Emulation memory capacity	Internal ROM		1 MB
	External memory		4 MB
Execution/pass detection coverage	Internal ROM		1 MB
memory capacity	External memory	In ROMless mode	2 MB
		When using iROM	1 MB
Trace memory capacity			168 bits \times 32 Kframes
Time measurement function			Measurement enabled with time tag or three timers
External logic probe			8-bit external trace possible
			Trace/break event setting possible
Break function			Event break
			Step execution break
			Forced break
			Fail safe break • Illegal access to peripheral I/O • Access to guard space • Write into ROM space

Caution Some of the functions may not be supported depending on the debugger used.

1.4 Hardware Configuration

The basic hardware configuration of the IE-V850ES-G1 is as follows.





1.5 System Configuration

The system configuration when connecting the emulation board to the IE-V850ES-G1, which is then connected to a personal computer (PC-9800 series, PC/AT[™] or compatibles) is illustrated below.





Notes 1. The device file can be downloaded from the website of NEC Electronics (http://www.necel.com/micro).2. For the probe cable, conversion adapter, and target connector, refer to the user's manual of the emulation board.

1.6 Contents in Carton

The carton of the IE-V850ES-G1 contains a main unit, guarantee card, packing list, and accessory bag.

Make sure that the accessory bag includes this manual and cables. In case of missing or damaged contents, please contact an NEC Electronics sales representative or an NEC Electronics distributor.



Figure 1-3. Contents in Carton

Check that the accessory bag contains this manual, an accessory list, and the following accessories.

- (a) PC interface cable (for PCI bus, for PCMCIA): \times 1 each
- (b) Power cable: $3 \text{ types}, \times 1 \text{ each}$ (c) External logic probe: $\times 1$ (d) External logic clips:1 set (10 clips)





1.7 Setup

The following two system configurations for the IE-V850ES-G1 are possible, depending on the purpose. This section describes the setup procedure according to each purpose as follows.

Step		Reference section	
------	--	-------------------	--

_

1.7.1 When using the emulator on a stand-alone basis for performing software debugging

E.

(1)	Connect interface board to PC	 3.1 Connection to Personal Computer
	Before connecting, turn off the PC.	
(2)	Connect emulation board	Refer to the user's manual of the emulation board
(3)	Set operation clock of emulator	Refer to the user's manual of the emulation board
(4)	Connect PC interface cable	 3.4 Cable Connections
	Connect cable.	
(5)	Power up PC, then IE-V850ES-G1	3.5 System Power-on and Power-off

1.7.2 When performing hardware debugging with target system

(1)	Connect interface board to PC	3.1 Connection to Personal Computer
	Before connecting, turn off the PC.	
(2)	Connect emulation board	Refer to the user's manual of the emulation board
(3)	Set operation clock of emulator	Refer to the user's manual of the emulation board
(4)	Connect PC interface cable	3.4 Cable Connections
	Connect cable.	
(5)	Connect IE-V850S-G1 to target system	3.2 Connection to Target System
(6)	Power up PC, then IE-V850ES-G1, then target system	 3.5 System Power-on and Power-off

Caution Before turning on the power of the target system, make sure that the power of the IE-V850ES-G1 is turned on. If the target system is turned on while the IE-V850ES-G1 is off, the target system or the IE-V850ES-G1 may be damaged.

CHAPTER 2 PART NAMES AND FUNCTIONS

This chapter describes the name and function of each part of the IE-V850ES-G1, as well as switch settings.

2.1 Part Names and Functions of IE-V850ES-G1





(1) LEDs

- Power (red): Turns on/off when the power switch is turned on/off.
 - ON: Lit

OFF: Off

• TARGET (amber): Indicates the status of the target power supply. Power supplied to target: Lit

Power not supplied to target: Off

• STATUS (green): Indicates various statuses of the emulator.

Indication varies depending on the emulation board to be connected.

For details, refer to the user's manual of the emulation board.

(2) External logic probe connector

Connect the external logic probe (included) to this connector.

(3) TRGOUT signal connector

This connector comprises the TRGOUT signal output and GND pins.







Figure 2-3. Part Names and Functions of IE-V850ES-G1 on Back Side

(1) Power switch

This is the main power supply switch of the emulator.

I: ON

O: OFF

(2) Fuse holder

Set the fuse here. Rating: 250 V, 3.15 A

(3) Power cable jack

Connect the power cable (included) here.

(4) Connector for PC interface

Connect the PC interface cable (included) here.

(5) Reset switch

This is the switch for resetting the IE-V850ES-G1.

CN2 CN3 PD703191 CN3 (CN2 CN3 PD703191 JP5 (CN1 FPGA JP7 JP5 JP3 FPGA JP4 JP6 CN1 JP6

Figure 2-4. Part Names and Functions of Board

(1) Jumpers (JP3 to JP7)

Jumper setting is not required. Do not change the factory settings. If the user's manual of the emulation board describes the setting of JP3 to JP7 of the IE-V850ES-G1, follow the setting described in the manual.

(2) Connectors for connecting emulation board (CN1 to CN3)

These connectors are for connecting the emulation board (sold separately).

2.2 Clock Settings

For the operation clock settings of the IE-V850ES-G1, refer to the user's manual of each emulation board.

2.3 CPU Operating Voltage Range

For the CPU operating voltage range, refer to the user's manual of each emulation board.

2.4 Cover Open/Close Procedure

2.4.1 Removing probe and replacing clock module

<1> Place your fingers at the positions indicated by the arrows below and pull front cover 1.





<2> Remove the probe or change the clock in the status shown below.





2.4.2 Replacing board

- <1> Remove front cover 1 following the procedures described in 2.4.1 Removing probe and replacing clock module.
- <2> Loosen the two screws indicated by the arrows below.





<3> Grip and pull up front cover 2 with the hinge installed on the rear panel as the center, and rotate the casing main unit as shown.





<4> Remove the six screws on the board indicated by the arrows and replace the board. For replacement of the emulation board, refer to the user's manual of each emulation board.





2.4.3 Closing cover

Close the cover in the reverse procedure as that used when opening the cover.

CHAPTER 3 CONNECTION OF COMPONENTS

The IE-V850ES-G1 enables debugging and programming of target devices by connecting several components and configuring the desired system.

This chapter describes the various components and their connection. Read this chapter when connecting system components. For the sequence of system configuration, refer to **1.7 Setup**.

For the details on software startup, refer to the user's manual of the debugger that is used.

3.1 Connection to Personal Computer

3.1.1 Overview of connection

The IE-V850ES-G1 can use a personal computer (PC-9800 series, or PC/AT compatible) as the host machine. The connection to each type of personal computer is described below.

(1) Desktop PC

When using a desktop PC, insert the following PC interface board in the external expansion slot of the desktop PC and connect the computer to the IE-V850ES-G1.

IE-70000-PCI-IF-A: For PCI bus (can also be used in a PC98-NX series, PC/AT or compatible)

(2) Notebook-type personal computer

When using a notebook-type personal computer, insert the interface card (IE-70000-CD-IF-A: Sold separately) in the PC card slot of the computer and connect the computer to the IE-V850ES-G1.

3.1.2 Connection procedure

(1) Powering off

Perform connection while the power of each unit is off. Before connecting, turn off the power of the IE-V850ES-G1 and the PC.

(2) PC interface board setting

When the IE-70000-PCI-IF-A is shipped, an 8-bit connector board is premounted. However, when the IE-V850ES-G1 is connected, this must be changed to a 32-bit connector board. The 32-bit connector board is supplied with the IE-70000-PCI-IF-A. For details, refer to the IE-70000-PCI-IF-A

The 32-bit connector board is supplied with the IE-70000-PCI-IF-A. For details, refer to the IE-70000-PCI-IF-A User's Manual.

3.1.3 Insertion of PC interface board

The following describes the settings and connection of an IBM PC/AT (including its compatibles) and the IE-70000-PCI-IF-A.

Figures 3-1 and 3-2 show how to mount the PC interface board.

- <1> Before starting, turn off the power of the PC.
- <2> Remove the casing of the PC.
- <3> Remove the cover of the PCI bus slot.





- <4> Insert the PC interface board.
- <5> Fix the PC interface board by fastening the screws.





<6> Replace the casing of the PC.

3.1.4 Connection of PC interface cable

Figure 3-3 shows how to connect the PC interface cable.

Connect the PC interface cable (for PCI bus) supplied with the IE-V850ES-G1 to the PC interface connector of the PC interface board.



Figure 3-3. Connection of PC Interface Board and PC Interface Cable

3.2 Connection to Target System

For how to connect the IE-V850ES-G1 and target system, refer to the user's manual of the emulation board.

3.3 Connection of External Logic Probe

When using the external logic probe, connect it to the external logic probe connector of the IE-V850ES-G1. Connect the external logic clips to the tips of the external logic probe.



Figure 3-4. Connection of External Logic Probe

Figure 3-5. External Logic Probe Connector Pins



Table 3-1. Pins of External Logic Probe Connector

Pin No.	<1>	<2>	<3>	<4>	<5>	<6>	<7>	<8>	<9>	<10>
Description	Bit 0	Bit 1	Bit 2	Bit 3	Bit 4	Bit 5	Bit 6	Bit 7	No connection	GND

Table 3-2. Electrical Characteristics of External Logic Probe Connector

Parameter	Min. [V]	Max. [V]	
Input voltage, high	Target voltage \times 0.7	Target voltage	
Input voltage, low	0	Target voltage \times 0.3	

3.4 Cable Connections

3.4.1 Connection of power supply cable

Connect the connector of the power supply cable (included) to the power supply cable jack on the main unit of the IE-V850ES-G1.





3.4.2 PC interface cable connection

Connect the PC interface cable to the PC interface connector of the IE-V850ES-G1.



Figure 3-7. PC Interface Cable Connection

3.4.3 External logic probe connection

When using the external logic probe, connect it to the external logic probe connector. For details, refer to the emulation board user's manual.

3.4.4 Additional information

The IE-V850ES-G1 can perform real-time tracing of the emulation CPU bus cycle. For details of this function, refer to the debugger user's manual.

- (1) Any eight signals can be traced in real-time.
- (2) Tracer start/stop is enabled using any eight signals.
- (3) Break setting is enabled using any eight signals.
 - Cautions 1. Connect the external logic probe only to a TTL-level signal line. High level and low level cannot be detected correctly if connected to lines other than TTL-level signal lines. Note that the sensor of the IE-V850ES-G1 and emulation board may be damaged by an excessive voltage level.
 - 2. When connecting the external logic probe, use the included external logic clips.

Procedure

- (1) Turn off the power of the target system.
- (2) Turn off the power of the IE-V850ES-G1.
- (3) Connect the external logic probe to any device on the target system.
- (4) Connect the GND of the external logic probe to the GND of the target system.

3.5 System Power-on and Power-off

After connecting the IE-V850ES-G1 and each system component (PC, target system, etc.), start up and shut down the system using the following procedure.

3.5.1 Power-on procedure

Cautions 1. Make sure that the IE-V850ES-G1 is correctly connected to the PC.

- 2. If the IE-V850ES-G1 is powered on or the system is terminated using a procedure other than the following, the IE-V850ES-G1 or the target system may be damaged.
- (1) Turn on the power switch of the PC.
- (2) Turn on the power switch of the IE-V850ES-G1. Set the power switch to "ON" after connecting the power cable to the power jack of the IE-V850ES-G1 and the plug to the power outlet.
- (3) Turn on the power of the target system.
- (4) Start the debugger.

3.5.2 Power-off procedure

- (1) Terminate the debugger.
- (2) Turn off the power switch of the target system.
- (3) Turn off the power switch of the IE-V850ES-G1.
- (4) Turn off the power switch of the PC.

CHAPTER 4 FACTORY SETTINGS

This chapter describes the switch settings when the product is shipped.

4.1 Factory Settings

	Setting	Description
Power switch	OFF	Power off
Jumper (JP3)	Shorted	Leave the setting.
Jumper (JP4)	Open	Leave the setting.
Jumper (JP5)	Shorted	Leave the setting.
Jumper (JP6)	Shorted	Leave the setting.
Jumper (JP7)	Open	Leave the setting.

Table 4-1. Factory Settings of Switches

APPENDIX A DIMENSIONS

