Microcontroller Technical Information

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Flash Memory Programmer

Usage Restrictions</td><td>Document No.</td><td>ZBG-CD-07-0029</td><td>1/2</td></tr>
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<tr><td>Issued by</td><td colspan="2">Development Tool Solution Group
Multipurpose Microcomputer Systems Division
Microcomputer Operations Unit
NEC Electronics Corporation</td></tr>
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		Notification classification	√	Usage restriction
Related documents	PG-FP4 User's Manual: U15260EJ4V0			Upgrade
				Document modification
				Other notification

1. Affected product

Product	Outline	Control Code[Note]
PG-FP4	Flash memory programmer	B, C, E, F, G, H (Firmware: V1.37 or earlier, Programming GUI: V2.18 or earlier)

<Version confirmation>

- Firmware version: Displayed by selecting [Reset] from the [Programmer] menu
- Programming GUI: Displayed by selecting [About] from the [Help] menu

2. New items

   This notification concerns added and changed specifications (No. 41 and No. 42).

   See the attachment for details.

3. Workarounds

   −

4. Modification schedule

   Products in which No. 41 and No. 42 are implemented are scheduled for release as follows.

   　　Newly shipped products: From the shipment of June 2007

   　　　　　　　　　　　　(Control code: H (firmware: V1.37, Programming GUI: V2.18))

   　　Upgrade for already shipped products: Available from June 4, 2007

   * Note that this schedule is subject to change without notice. For the detailed release schedule of modified products, contact an NEC Electronics sales representative.

Note	The "control code" is the second digit from the left in the 10-digit serial number. If the product has been upgraded, a label indicating the new version is attached to product and the x in V-UP LEVEL x on this label indicates the control code.

5. List of restrictions

Notes on using the PG-FP4, including the revision history and detailed information, are described in the attachment.

6. Document revision history

<div align="center">PG-FP4 Flash Memory Programmer Usage Restrictions</div>

Document Number	Issued on	Description
SBG-TT-0124-E	June 7, 2002	Addition of new bug (No. 15) (No. 1 to No. 14 are described in the document supplied with the shipped product.)
SBG-TT-0170-E	July 30, 2002	Addition of new bugs (No. 16 to No. 19)
SBG-TT-0226-E	October 10, 2002	Addition of new bugs (No. 20 to No. 23)
SBG-DT-03-0067-E	February 17, 2003	Addition of new bugs (No. 24 to No. 26)
SBG-DT-03-0135-E	May 7, 2003	Addition of new bug (No. 27)
SBG-DT-04-0116	March 18, 2004	Addition of new bugs (No. 29, No. 44 to No. 46) Specification changes (No. 28, No. 30 to No. 43)
ZBG-CD-04-0016	June 11, 2004	Addition of new bugs (No. 47 to No. 52)
ZBG-CD-04-0084	November 1, 2004	Addition of new bugs (No. 53 and No. 54) Specification changes (No. 55 to No. 58)
ZBG-CD-05-0021	March 4, 2005	Modification of bug description (No. 29) Addition of bug (No. 60) Addition of specifications (No. 59, No. 61, and No. 62)
ZBG-CD-05-0099	November 1, 2005	Addition of new bugs (No. 63 and No. 64) Addition of specifications (No. 65 to No. 68)
ZBG-CD-06-0005	February 20, 2006	Addition of new bugs (No. 69 and No. 70) Addition of specification (No. 71)
ZBG-CD-06-0069	August 4, 2006	Addition of new bugs (No. 75 and No. 76) Addition of specifications (No. 72 to No. 74) Addition of items to **6. Difference Manual** (attachment 25, 30 to 36)
ZBG-CD-07-0029	May 21, 2007	Division of Product History into two sections: *Additions and changes to specifications* and *Restrictions* Addition of new specifications (No. 41 and No. 42)

Operating Precautions for PG-FP4

This document describes added/changed specifications, restrictions and cautions for the PG-FP4. Also refer to the user's manual of the PG-FP4 for cautions on using the PG-FP4.

Refer to the following documents for the restrictions in the target device.

- User's manual of target device
- Restrictions notification document for target device

1. Introduction

1.1 Parameter file

The parameter file is not included with the PG-FP4.

Download the parameter file for PG-FP4, PG-FPLx or MINICUBE2 from the NEC Electronics website shown below.

English version: http://www.necel.com/micro/ods/eng/ → Click "Version-up Service".

Japanese version: http://www.necel.com/micro/ods/jpn/

1.2 Writing quality

The PG-FP4 guarantees the content written in the flash memory as long as the following conditions are satisfied.

- Circuits are designed as described in the user's manuals for the device and the PG-FP4.
- The PG-FP4 is used as described in the user's manuals for the device and the PG-FP4.
- The power supplied to the target device is stable.

2. Product Version

Item No.	Control Code^{Note}	Firmware	GUI Software	Remark
<1>	B	V1.16	V1.09	Hardware bug exists; see No. 17 in section **5.**
<2>	C	V1.17	V2.00	Hardware bug exists; see No. 17 in section **5.**
<3>		V1.18	V2.02	Hardware bug exists; see No. 17 in section **5.**
<4>		V1.19	V2.04	Hardware bug exists; see No. 17 in section **5.**
<5>	E	V1.21	V2.05	
<6>	E, F	V1.23	V2.05	
<7>		V1.30	V2.11	
<8>		V1.31	V2.13	
<9>	G	V1.32	V2.14	
<10>		V1.33	V2.15	
<11>	H	V1.34	V2.16	
<12>		V1.35	V2.16	
<13>		V1.36	V2.17	
<14>		V1.37	V2.18	

<Version confirmation>

- Firmware version: Displayed by selecting [Reset] from the [Programmer] menu
- Programming GUI version: Displayed by selecting [About] from the [Help] menu

> **Note** The "control code" is the second digit from the left in the 10-digit serial number.
> If the product has been upgraded, a label indicating the new version is attached to the product and the x
> in V-UP LEVEL x on this label indicates the control code.

3. Additions and Changes to Specifications

3.1 List of Additions and Changes to Specifications

No.	Additions and Changes to Specifications	Item Number													
		<1>	<2>	<3>	<4>	<5>	<6>	<7>	<8>	<9>	<10>	<11>	<12>	<13>	<14>
1	IIC communication	×	O	O	O	O	O	O	O	O	O	O	O	O	O
2	Single-power-supply flash memory microcontroller	×	O	O	O	O	O	O	O	O	O	O	O	O	O
3	Addition of program area switching icon	×	×	O	O	O	O	O	O	O	O	O	O	O	O
4	Update of USB driver	×	×	O	O	O	O	O	O	O	O	O	O	O	O
5	Modification of specification of baud rate selection in UART communication mode	×	×	×	O	O	O	O	O	O	O	O	O	O	O
6	Modification of specification of multiplication rate selection format	×	×	×	×	O	O	O	O	O	O	O	O	O	O
7	Addition of display of number of VPP/FLMD pulses when selecting communication port	×	×	×	×	O	O	O	O	O	O	O	O	O	O
8	Addition of subcommands to Read command	×	×	×	×	×	×	O	O	O	O	O	O	O	O
9	Addition of Get Security Settings command	×	×	×	×	×	×	O	O	O	O	O	O	O	O
10	Addition of Boot block cluster setting function	×	×	×	×	×	×	O	O	O	O	O	O	O	O
11	Addition of Read command disable function	×	×	×	×	×	×	O	O	O	O	O	O	O	O
12	Addition of Boot block cluster reprogramming disable function	×	×	×	×	×	×	O	O	O	O	O	O	O	O
13	Addition of reset vector address transmit function	×	×	×	×	×	×	O	O	O	O	O	O	O	O
14	<File checksum> Addition of Arithmetic checksum (16 bits) and modification of GUI display	×	×	×	×	×	×	O	O	O	O	O	O	O	O
15	Modification of CRC command specification	×	×	×	×	×	×	O	O	O	O	O	O	O	O
16	Addition of 57,600 bps, 115,200 bps, 128,000 bps to GUI baud rate selection menu for UART communication	×	×	×	×	×	×	O	O	O	O	O	O	O	O
17	Modification of target power supply detection function	×	×	×	×	×	×	O	O	O	O	O	O	O	O
18	Modification of [Upload…] menu specifications (1)	×	×	×	×	×	×	O	O	O	O	O	O	O	O
19	Modification of [Upload…] menu specifications (2)	×	×	×	×	×	×	O	O	O	O	O	O	O	O
20	Modification of [Logging] menu specifications	×	×	×	×	×	×	O	O	O	O	O	O	O	O

−: Not relevant, ×: Specification change not implemented, O: Specification change implemented

No.	Additions and Changes to Specifications	Item Number													
		<1>	<2>	<3>	<4>	<5>	<6>	<7>	<8>	<9>	<10>	<11>	<12>	<13>	<14>
21	Modification of GUI specification when host machine is shut down	×	×	×	×	×	×	○	○	○	○	○	○	○	○
22	Modification of specification when Disable Chip Erase is selected and GUI information message is cancelled	×	×	×	×	×	×	○	○	○	○	○	○	○	○
23	Modification of [Upload…] menu specifications (3)	×	×	×	×	×	×	×	○	○	○	○	○	○	○
24	Modification of default communication speed	×	×	×	×	×	×	×	○	○	○	○	○	○	○
25	Addition of function to display Checksum command execution result on LCD	×	×	×	×	×	×	×	○	○	○	○	○	○	○
26	Improvement in noise characteristics	×	×	×	×	×	×	×	○	○	○	○	○	○	○
27	Deletion of READ command in standalone mode	–	–	–	–	–	–	×	×	○	○	○	○	○	○
28	Modification of LCD display for Option Setting menu in standalone mode	×	×	×	×	×	×	×	×	○	○	○	○	○	○
29	Addition of Progarea size display	×	×	×	×	×	×	×	×	○	○	○	○	○	○
30	Support of single-wire UART communication (78K0S/Kx1+)	×	×	×	×	×	×	×	×	○	○	○	○	○	○
31	Addition of 9 MHz to clocks supplied from PG-FP4	×	×	×	×	×	×	×	×	×	○	○	○	○	○
32	Modification of percentage display when a verify error occurs in block mode with single-power-supply flash memory microcontroller	×	×	×	×	×	×	×	×	×	○	○	○	○	○
33	Addition of function for selecting enable/disable of power supply detection function at VDD pin	–	–	–	–	–	–	×	×	×	×	○	○	○	○
34	Modification of specification so as not to supply VDD2 when output voltage at VDD2 pin is set to 2.0 V or lower	×	×	×	×	×	×	×	×	×	×	○	○	○	○
35	Modification of display of [Download] menu and [Upload] menu	×	×	×	×	×	×	×	×	×	×	○	○	○	○
36	Change of default settings of File Checksum	×	×	×	×	×	×	×	×	×	×	○	○	○	○
37	Addition of specifications to cope with a bug in μPD70F3025A rank M	×	×	×	×	×	×	×	×	×	×	×	○	○	○
38	Support of devices with code flash and data flash areas	–	–	–	–	–	–	×	×	×	×	×	×	○	○
39	Support of specifications in conjunction with support of 78K0R	–	–	–	–	–	–	×	×	×	×	×	×	○	○
40	Change of specification to conform the Read command Intel format	–	–	–	–	–	–	×	×	×	×	×	×	○	○

–: Not relevant, ×: Specification change not implemented, ○: Specification change implemented

No.	Additions and Changes to Specifications	Item Number													
		<1>	<2>	<3>	<4>	<5>	<6>	<7>	<8>	<9>	<10>	<11>	<12>	<13>	<14>
41	Change of Cancel button specification	×	×	×	×	×	×	×	×	×	×	×	×	×	○
42	Change of specification for COM port selection	×	×	×	×	×	×	×	×	×	×	×	×	×	○

−: Not relevant, ×: Specification change not implemented, ○: Specification change implemented

3.2 Details of Additions and Changes to Specifications

No. 1 IIC communication

[Description]

The IIC communication mode adapter board is included.

When using IIC communication mode with PG-FP4 control code B, short the SI and SO pins in the PG-FP4.

Connection example
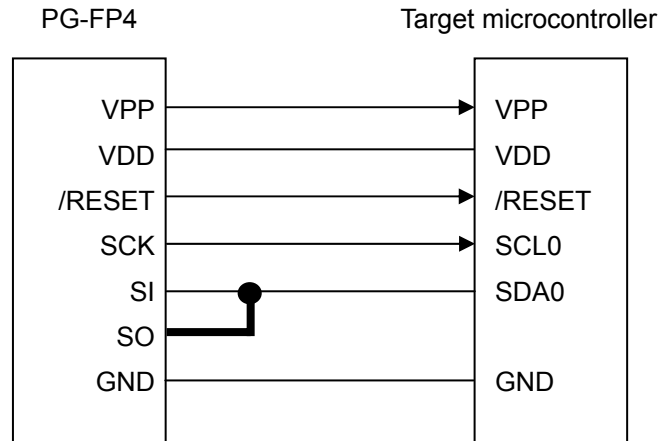
[Implementation]

The IIC communication mode adapter board is included in products with control code C (firmware: V1.17, GUI: V2.00) and later. Use the IIC communication mode adapter board for IIC communication.

No. 2 Single-power-supply flash memory microcontroller

[Description]

The single-power-supply flash memory microcontroller is supported.

[Implementation]

This item has been implemented in products with control code C (firmware: V1.17, GUI: V2.00) and later.

No. 3 Addition of program area switching icon

[Description]

The program area switching icon has been added to the toolbar for the programming GUI.

Switch the program area using [Select Programming Area...] on the [Programmer] menu.

[Implementation]

This item has been implemented in products with control code C (firmware: V1.18, GUI: V2.02) and later.

No. 4 Update of USB driver

[Description]

Some of the USB driver specifications required in the Windows 2000 Service Pack 2 (SP2) environment was changed. Accompanied by this change, the USB driver included in the PG-FP4 has also been changed to meet the required specifications.

[How to upgrade]

How to update a USB driver already installed is described below.

1. Open Device Manager in Windows.

2. Select "USBIO Device….. (NEC Flash Programmer)" under "USBIO controlled devices" and click [Properties].

3. Select the Driver tab and execute [Update Driver…] to update the driver.
   Use the driver under the directory Setup\Drivers included in programming GUI V.2.02 and later.

No. 5 Modification of specification of baud rate selection in UART communication mode

[Description]

4,800 bps has been deleted from the baud rate selection list in the UART communication mode.

[Implementation]

This item has been implemented in products with control code C (firmware: V1.19, GUI: V2.04) and later.

No. 6 Modification of specification of multiplication rate selection format

[Description]

The multiplication rate can be separately selected for Direct mode and PLL mode. In addition, the multiplication rate can be directly input in PLL mode.

[Implementation]

This item has been implemented in products with control code E (firmware: V1.21, GUI: V2.05) and later.

No. 7 Addition of display of number of VPP/FLMD pulses when selecting communication port

[Description]

The number of VPP or FLMD pulses output from the PG-FP4 is displayed when selecting the communication port.

[Implementation]

This item has been implemented in products with control code E (firmware: V1.21, GUI: V2.05) and later.

No. 8 Addition of subcommands to Read command

[Description]

[View] (displays the read data in the communication log window), [Write Intel HEX file] (displays and saves the read data in the Intel HEX format), and [Write Motorola SREC file] (displays and saves the read data in the Motorola SREC format) can be executed from the [Read] menu when using a device that can read device data.

[Implementation]

This item has been implemented in products with control code E (firmware: V1.30, GUI: V2.11) and later.

No. 9 Addition of Get Security Settings command

[Description]

The Get Security Settings command can be executed when using a device that can check the security status inside the device.

[Implementation]

  This item has been implemented in products with control code E (firmware: V1.30, GUI: V2.11) and later.

No. 10 Addition of Boot block cluster setting function

[Description]

  The Boot block cluster setting function can be executed when using a device that can set boot swap.

[Implementation]

  This item has been implemented in products with control code E (firmware: V1.30, GUI: V2.11) and later.

No. 11 Addition of Read command disable function

[Description]

  The Disable Read function can be executed when using a device that can disable the Read command using a security setting.

[Implementation]

  This item has been implemented in products with control code E (firmware: V1.30, GUI: V2.11) and later.

No. 12 Addition of Boot block cluster reprogramming disable function

[Description]

  The Disable Boot block cluster reprogramming function can be executed when using a device that can disable the Boot block cluster reprogramming function using a security setting.

[Implementation]

  This item has been implemented in products with control code E (firmware: V1.30, GUI: V2.11) and later.

No. 13 Addition of reset vector address transmit function

[Description]

  The Reset vector can be executed when using a device that can transmit the Reset vector address using a security setting.

[Implementation]

  This item has been implemented in products with control code E (firmware: V1.30, GUI: V2.11) and later.

No. 14 <File checksum> Addition of Arithmetic checksum (16 bits) and modification of GUI display

[Description]

  The specification has been modified so that the Arithmetic checksum (16 bits) can be used for the File checksum function.

  In addition, the result of the checksum is displayed in the programmer parameter window, and initialized when a new file is downloaded.

[Implementation]

  This item has been implemented in products with control code E (firmware: V1.30, GUI: V2.11) and later.

No. 15 Modification of CRC command specification

[Description]

In conjunction with modification of the specification of the File checksum function, the crc command used when downloading a file or executing EPV has been changed to the crc_no_store command.

[Implementation]

This item has been implemented in products with control code E (firmware: V1.30, GUI: V2.11) and later.

No. 16 Addition of 57,600 bps, 115,200 bps, and 128,000 bps to GUI baud rate selection menu for UART communication

[Description]

The serial baud rate specification has been modified so that 57,600 bps, 115,200 bps, and 128,000 bps can be selected in the device to make allowances for the speed of UART communication in future flash memory macros.

[Implementation]

This item has been implemented in products with control code E (firmware: V1.30, GUI: V2.11) and later.

No. 17 Modification of target power supply detection function

[Description]

The specification has been modified so that the target power supply detection function operates under the following settings.

(1) When VDD is supplied from the PG-FP4

The error message "Target power detected! Check Setup." is displayed when the target VDD is 0.2 V or higher before VDD is supplied from the PG-FP4

(2) When VDD is supplied from the target

The error message "No VDD applied or Voltage is out of range" is displayed when VDD is ±5% out of the set range immediately before communication is started.

[Implementation]

This item has been implemented in products with control code E (firmware: V1.30, GUI: V2.11) and later.

No. 18 Modification of [Upload…] menu specifications (1)

[Description]

With the conventional specifications, if the [Open] button in the window opened by selecting the [Upload…] menu is clicked, data is displayed immediately. With the new specifications, the message "Press <return> to start/continue output" is displayed and keeps users waiting for the upload data to be displayed.

[Implementation]

This item has been implemented in products with control code E (firmware: V1.30, GUI: V2.11) and later.

No. 19 Modification of [Upload…] menu specifications (2)

[Description]

   With the conventional specifications, no extension is appended to the file name if a file is saved without specifying the extension in the window opened by selecting the [Upload…] menu. With the new specifications, .hex or .rec is appended.

[Implementation]

   This item has been implemented in products with control code E (firmware: V1.30, GUI: V2.11) and later.

No. 20 Modification of [Logging] menu specifications

[Description]

   With the conventional specifications, no extension is appended to the file name if a file is saved without specifying the extension in the window opened by selecting the [Logging] menu. With the new specifications, .txt is appended.

[Implementation]

   This item has been implemented in products with control code E (firmware: V1.30, GUI: V2.11) and later.

No. 21 Modification of GUI specification when host machine is shut down

[Description]

   With the conventional specifications, the GUI of the PG-FP4 must be shut down before shutting down the host machine. With the new specifications, the GUI of the PG-FP4 is automatically shut down.

[Implementation]

   This item has been implemented in products with control code E (firmware: V1.30, GUI: V2.11) and later.

No. 22 Modification of specification when Disable Chip Erase is selected and GUI information message is cancelled

[Description]

   With the conventional specifications, if the [Cancel] button is clicked for the GUI information message that pops up when Disable Chip Erase is selected, the Setup window is closed at the same time. With the new specifications, the Setup window is not closed at this time.

[Implementation]

   This item has been implemented in products with control code E (firmware: V1.30, GUI: V2.11) and later.

No. 23 Modification of [Upload…] menu specifications (3)

 [Description]

   The size of data that can be uploaded from the PG-FP4 has been changed from 1 MB to 2 MB.

[Implementation]

   This item has been implemented in products with control code E (firmware: V1.31, GUI: V2.13) and later.

No. 24 Modification of default communication speed (modification of specification)

[Description]

   The communication speed that is displayed when the communication port is determined in the Device Setup window has been changed from the lowest speed to the highest speed.

[Implementation]

  This item has been implemented in products with control code E (firmware: V1.31, GUI: V2.13) and later.

No. 25 Addition of function to display Checksum command execution result on LCD

[Description]

  The result of Device Checksum command execution in standalone mode is now displayed on the LCD.

[Implementation]

  This item has been implemented in products with control code E (firmware: V1.31, GUI: V2.13) and later.

No. 26 Improvement in noise characteristics

[Description]

  The noise characteristics (such as electrostatic and overvoltage) have been improved.

[Implementation]

  This item has been implemented in products with control code E (firmware: V1.31, GUI: V2.13) and later.

No. 27 Deletion of READ command in standalone mode

[Description]

  The READ command in standalone mode has been deleted.

[Implementation]

  This item has been implemented in products with control code G (firmware: V1.32, GUI: V2.14) and later.

No. 28 Modification of LCD display for Option Setting menu in standalone mode

[Description]

  All the contents of the Option Setting menu are now displayed by LCD even in standalone mode.

[Implementation]

  This item has been implemented in products with control code G (firmware: V1.32, GUI: V2.14) and later.

No. 29 Addition of Progarea size display

[Description]

  The size of the internal memory area that is currently usable is now displayed when Progarea is displayed
  in the communication log window.

[Implementation]

  This item has been implemented in products with control code G (firmware: V1.32, GUI: V2.14) and later.

No. 30 Support of single-wire UART communication (78K0S/Kx1+)

[Description]

  The device (78K0S/Kx1+) with the single-wire UART communication function is now supported. Short
  the target I/F signals CLK and FLMD0, and SI and SO in the program adapter (FA series) or the target.
  Refer to **6. Document Correction** for details.

[Implementation]

  The IIC/78K0S/KX1+ adapter has been included with products with control code G (firmware: V1.32, GUI:
  V2.14) and later.

No. 31 Addition of 9 MHz to clocks supplied from PG-FP4

[Description]

  A 9 MHz clock has been added to clocks supplied from the PG-FP4.

[Implementation]

  This item has been implemented in products with control code G (firmware: V1.33, GUI: V2.15) and later.

No. 32 Modification of percentage display when a verify error occurs in block mode with single-power-supply flash memory microcontroller

[Description]

  When a verify error occurs in block mode with single-power-supply flash memory microcontroller, the final display percentage does not reach 100% depending on the device used.   The specification has been modified so that a percentage indication of up to 100% is displayed.

[Implementation]

  This item has been implemented in products with control code G (firmware: V1.33, GUI: V2.15) and later.

No. 33 Addition of function for selecting enable/disable of power supply detection function at VDD pin

[Description]

  A function for selecting enable or disable of the power supply detection function at the VDD pin, with the setting that VDD is supplied from the target system, has been added. This function has been added to the Advanced Setup menu that is selectable from [Setup...] under the [Device] menu. Select the "Vdd monitoring" check box to enable this function. Clear the "Vdd monitoring" check box to disable this function. The "Vdd monitoring" check box becomes selectable by selecting the "On Target" check box as shown below.
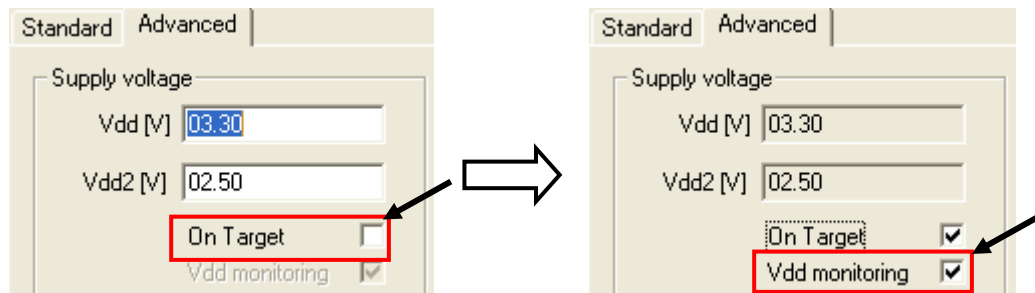
  Caution When this function is disabled, the product can be used even if the VDD pin of the target system and that of the PG-FP4 are not connected, as long as the VDD generated in the target system and the VDD of the output signal generated by the PG-FP4 match.

[Implementation]

  This item has been implemented in products with control code H (firmware: V1.34, GUI: V2.16) and later.

No. 34 Modification of specification so as not to supply VDD2 when output voltage at VDD2 pin is set to 2.0 V or lower

[Description]

A voltage of 2.0 V or lower cannot be output from the VDD2 pin according to the PG-FP4 specifications. The specification has therefore been modified so as not to supply VDD2 from the PG-FP4 when a parameter file in which the output voltage at the VDD2 pin is set to 2.0 V or lower is loaded. At this time, CLK is not supplied from the PG-FP4 if the voltage level of the CLK is set to VDD2.

[Implementation]

This item has been implemented in products with control code H (firmware: V1.34, GUI: V2.16) and later.

No. 35 Modification of display of [Download] menu and [Upload] menu

[Description]

The notations of the [Download...] and [Upload...] menus that are selected from the menu bar have been changed.

    "Download..." → "Download to FP4..."

    "Upload..." → "Upload from FP4..."

[Implementation]

This item has been implemented in products with control code H (firmware: V1.34, GUI: V2.16) and later.

No. 36 Change of default settings of File Checksum

[Description]

In the Checksum dialog box that is opened from [Checksum...] in the [File] menu, the default setting of the memory area to be calculated has been changed from "Check Complete Programmer Application Memory" to "Device Area".

[Implementation]

This item has been implemented in products with control code H (firmware: V1.34, GUI: V2.16) and later.

No. 37 Addition of specifications to cope with a bug in μPD70F3025A rank M

[Description]

Specifications have been modified to cope with a bug that causes an internal verify error when using the μPD70F3025A rank M (refer to ZBG-CC-05-0074).

[Implementation]

This item has been implemented in products with control code H (firmware: V1.35, GUI: V2.16) and later and parameter file 70F3025A PRM V1.05 and later.

No. 38 Support of devices with code flash and data flash areas

[Description]

Devices that have code flash and data flash areas, such as the V850ES/Fx3, are now supported. If chip erase is performed, entire blocks in the code flash and data flash areas are erased and the security functions are initialized.

In conjunction with the addition of this specification, specifications for the Upload command and HEX Editor function have been changed. Refer to **6. Document Correction** for details.

[Implementation]

This item has been implemented in products with control code H (firmware: V1.36, GUI: V2.17) and later.

No. 39 Support of specifications in conjunction with support of 78K0R

[Description]

In conjunction with support of 78K0R microcontrollers, the selectable communication rates have been added to the [Speed] drop-down list in the [Target Device Connection] area on the Standard tab, and the [FS Block start] and [FS Block end] drop-down lists have been added to the [Security flag settings] on the Advanced tab, in the Device Setup dialog box. Refer to **6. Document Correction** for details.

[Implementation]

This item has been implemented in products with control code H (firmware: V1.36, GUI: V2.17) and later.

No. 40 Change of specification to conform the Read command Intel format

[Description]

The data record format has been changed from an extended address record to an extended linear address record so as to conform the Intel format employed by the Read command to that of the Upload command.

[Implementation]

This item has been implemented in products with control code H (firmware: V1.36, GUI: V2.17) and later.

No. 41 Change of Cancel button specification

[Description]

A specification for the function of the Cancel button on the PG-FP4 main unit has been changed. Previously, the Cancel button could abort any command; now it can abort only the Read command.

[Implementation]

This item has been implemented in products with control code H (firmware: V1.37, GUI: V2.18) and later.

No. 42 Change of specification for COM port selection

[Description]

A specification for COM ports has been changed. Previously, up to COM4 could be selected; now up to COM256 can be selected. In conjunction with this change, the display has been changed so as to show only the available COM ports.

[Implementation]

This item has been implemented in products with control code H (firmware: V1.37, GUI: V2.18) and later.

4. Cautions

4.1 List of cautions

No.	Cautions	Action
1	Operating clock of target microcontroller	Described in section 6.
2	Caution on SIO-H/S communication mode (1)	Described in section 6.
3	Caution on SIO-H/S communication mode (2)	Described in section 6.
4	Caution on SIO communication mode	Described in section 6.
5	Caution on connecting target cable	Described in section 6.
6	Security flag settings in 78K0S/Kx1+	Described in section 6.
7	Optional products	Described in section 6.
8	When output from Vdd or Vdd2 is 2.0 V or lower	Described in section 6.

4.2 Details of cautions

No. 1   Operating clock of target microcontroller

This item is related to the specification, so it is described in **6. Document Correction**.

No. 2   Caution on SIO-H/S communication mode (1)

This item is related to the specification, so it is described in **6. Document Correction**.

No. 3   Caution on SIO-H/S communication mode (2)

This item is related to the specification, so it is described in **6. Document Correction**.

No. 4   Caution on SIO communication mode

This item is related to the specification, so it is described in **6. Document Correction**.

No. 5   Caution on connecting target cable

This item is related to the specification, so it is described in **6. Document Correction**.

No. 6   Security flag settings in 78K0S/Kx1+

This item is related to the specification, so it is described in **6. Document Correction**.

No. 7   Optional products

This item is related to the specification, so it is described in **6. Document Correction**.

No. 8   When output from Vdd or Vdd2 is 2.0 V or lower

This item is related to the specification, so it is described in **6. Document Correction**.

5. Restrictions

5.1 List of restrictions

No.	Restrictions	Item Number													
		<1>	<2>	<3>	<4>	<5>	<6>	<7>	<8>	<9>	<10>	<11>	<12>	<13>	<14>
1	Bug in automatic signature selection	×	O	O	O	O	O	O	O	O	O	O	O	O	O
2	Bug in USB communication	×	O	O	O	O	O	O	O	O	O	O	O	O	O
3	Bug in baud rate during upload	×	O	O	O	O	O	O	O	O	O	O	O	O	O
4	Bug in Abort	×	O	O	O	O	O	O	O	O	O	O	O	O	O
5	Restriction on single-power-supply flash memory microcontroller	×	×	O	O	O	O	O	O	O	O	O	O	O	O
6	Bug in HEX Editor address display	O	×	O	O	O	O	O	O	O	O	O	O	O	O
7	Bug in [Signature] command display when using USB I/F	O	×	O	O	O	O	O	O	O	O	O	O	O	O
8	Bug in write processing	O	×	O	O	O	O	O	O	O	O	O	O	O	O
9	Bug in parallel I/F communication	O	×	×	O	O	O	O	O	O	O	O	O	O	O
10	Restriction on checksum command in two-power-supply flash memory microcontroller	×	×	×	O	O	O	O	O	O	O	O	O	O	O
11	Bug in communication port selection in single-power-supply flash memory microcontroller	×	×	×	O	O	O	O	O	O	O	O	O	O	O
12	Bug in display of device checksum command	×	×	×	O	O	O	O	O	O	O	O	O	O	O
13	Bug in upload	×	×	×	O	O	O	O	O	O	O	O	O	O	O
14	Bug in upgrading firmware	×	×	×	O	O	O	O	O	O	O	O	O	O	O
15	Restriction on security function of single-power-supply flash memory microcontroller	×	×	×	×	O	O	O	O	O	O	O	O	O	O
16	Bug in SIO-H/S communication mode	×	×	×	×	O	O	O	O	O	O	O	O	O	O
17	Bug in voltage output when power supply is turned on/off	×	×	×	×	O	O	O	O	O	O	O	O	O	O
18	Bug in setting checksum command in two-power-supply flash memory microcontroller	×	×	×	×	O	O	O	O	O	O	O	O	O	O
19	Bug in checksum command in two-power-supply flash memory microcontroller when operated in standalone mode	×	×	×	×	O	O	O	O	O	O	O	O	O	O
20	Bug in downloading Motorola S-format HEX file	×	×	×	×	×	O	O	O	O	O	O	O	O	O
21	The last address input for file upload differs from the one actually executed	×	×	×	×	×	×	O	O	O	O	O	O	O	O
22	Bug in Address display in Block/Area	×	×	×	×	×	×	O	O	O	O	O	O	O	O
23	Bug in execution of Update Firmware with USB 2.0	×	×	×	×	×	×	×	O	O	O	O	O	O	O

−: Not relevant, ×: Applicable, O: Corrected

No.	Restrictions	Item Number													
		<1>	<2>	<3>	<4>	<5>	<6>	<7>	<8>	<9>	<10>	<11>	<12>	<13>	<14>
24	Bug in cancel operation in Security flag Setting confirmation dialog box	O	O	O	O	O	O	×	O	O	O	O	O	O	O
25	Bug in CLK output	O	O	O	O	O	O	×	O	O	O	O	O	O	O
26	Bug in address display in Boot block cluster setting	–	–	–	–	–	–	×	O	O	O	O	O	O	O
27	Communication cannot be performed after firmware upgrade	O	O	O	O	O	O	×	×	O	O	O	O	O	O
28	Bug in output from SO/TxD, RESET, SCK pins when VDD (VDD2) output is turned off	O	O	O	O	O	O	O	×	O	O	O	O	O	O
29	Bug in Read command when UART is used for USB communication	–	–	–	–	–	–	×	×	×	O	O	O	O	O
30	Bug related to power supply detection function at VDD pin	–	–	–	–	–	–	×	×	×	×	O	O	O	O
31	Bug in LCD display	×	×	×	×	×	×	×	×	×	×	O	O	O	O
32	File checksum command results in an error when downloading a HEX file	O	O	O	O	O	O	O	O	O	O	×	O	O	O
33	LED indicator does not glow red if execution of EPV command results in an error	×	×	×	×	×	×	×	×	×	×	×	O	O	O
34	Bug in saving Motorola S format file in HEX Editor	×	×	×	×	×	×	×	×	×	×	×	×	O	O
35	PG-FP4 hangs up under certain conditions during standalone mode	×	×	×	×	×	×	×	×	×	×	×	×	O	O

–: Not relevant, ×: Applicable, O: Corrected

5.2 Details of restrictions

No. 1 Bug in automatic signature selection

[Description]

  When multiple signature information is stored in a parameter file, the valid signature cannot be selected
  automatically.

[Workaround]

  Be sure to use the released parameter file that supports the target microcontroller.

[Correction]

  This issue has been corrected in products with control code C (firmware: V1.17, GUI: V2.00) and later.

No. 2 Bug in USB communication

[Description]

  USB communication with the host cannot be performed in Windows 98 and Windows Me.

[Workaround]

  Use the serial interface (RS-232C) when using Windows 98 or Windows Me. To use USB communication,
  use Windows 2000.

  In addition, use the serial interface (RS-232C) when updating firmware data in the PG-FP4. Firmware
  data cannot be updated via USB communication.

[Correction]

  This issue has been corrected in products with control code C (firmware: V1.17, GUI: V2.00) and later.

No. 3 Bug in baud rate during upload

[Description]

  When serial communication is used with a baud rate of 38,400 bps or higher in the Upload menu (File →
  Upload), the message "E 502 Programmer is not responding" is displayed and the upload may not be
  performed correctly.

[Workaround]

  There is no workaround. Use serial communication with a baud rate of 19,200 bps or less.

[Correction]

  This issue has been corrected in products with control code C (firmware: V1.17, GUI: V2.00) and later.

No. 4 Bug in Abort

[Description]

  Even if "Abort" is executed after a command for the target microcontroller is executed, the Abort is not
  executed and the command processing is executed instead.

[Workaround]

  There is no workaround. Do not use "Abort".

[Correction]

  This issue has been corrected in products with control code C (firmware: V1.17, GUI: V2.00) and later.

No. 5 Restriction on single-power-supply flash memory microcontroller

[Description]

If a communication port other than SIO is used in the single-power-supply flash memory microcontroller, communication may not be performed depending on the target clock frequency.

Moreover, the following functions cannot be used regardless of the communication port.

- Checksum after Program

[Workaround]

Use the SIO communication port.

[Correction]

This issue has been corrected in products with control code C (firmware: V1.18, GUI: V2.02) and later.

No. 6 Bug in HEX Editor address display

[Description]

When a Motorola-SRC format file is loaded, the end address displayed in the application software is the address incremented by one. This bug is just a problem of address display; there is no problem in the loaded data.

[Workaround]

There is no workaround.

[Correction]

This issue has been corrected in products with control code C (firmware: V1.18, GUI: V2.02) and later.

No. 7 Bug in [Signature] command display when using USB I/F

[Description]

If the [Signature] command is executed when using the USB I/F, the following message will be output.

- Power failure detected!
- No Device connected.

This bug is just a problem of display in the application software; there is no operational problem.

[Workaround]

There is no workaround.

[Correction]

This issue has been corrected in products with control code C (firmware: V1.18, GUI: V2.02) and later.

No. 8 Bug in write processing

[Description]

When the PROGRAM command is executed in the μPD78F4046, PROGRAM processing is repeated unnecessarily.

[Workaround]

There is no workaround.

There is no problem in terms of product quality in a device in which this processing occurs.

[Correction]

This issue has been corrected in products with control code C (firmware: V1.18, GUI: V2.02) and later.

No. 9 Bug in parallel I/F communication

[Description]

Correct communication cannot be performed via the parallel I/F (dedicated to download).

[Workaround]

There is no workaround. Use the serial I/F (RS-232C) or USB.

[Correction]

This issue has been corrected in products with control code C (firmware: V1.19, GUI: V2.04) and later.

No. 10 Restriction on checksum command in two-power-supply flash memory microcontroller

[Description]

The checksum command is not supported in the two-power-supply flash memory microcontroller.

Therefore, the checksum command cannot be executed.

[Workaround]

There is no workaround.

[Correction]

This issue has been corrected in products with control code C (firmware: V1.19, GUI: V2.04) and later.

No. 11 Bug in communication port selection in single-power-supply flash memory microcontroller

[Description]

When using the single-power-supply flash memory microcontroller (except V850ES/SA2 and V850ES/SA3), the communication port selection menu of the GUI is displayed as a blank, so the relevant port cannot be selected.

[Workaround]

There is no workaround.

[Correction]

This issue has been corrected in products with control code C (firmware: V1.19, GUI: V2.04) and later.

No. 12 Bug in display of device checksum command

[Description]

The result of the first device checksum command immediately after power-on or a reset cannot be displayed correctly.

[Workaround]

The result is displayed correctly from the second and later device checksum command.

[Correction]

This issue has been corrected in products with control code C (firmware: V1.19, GUI: V2.04) and later.

No. 13 Bug in upload

[Description]

If the size of a file to be uploaded is FFDh or larger, a symbol ">" is appended at the end of the file when it is saved.

[Workaround]

There is no workaround.

[Correction]

　　This issue has been corrected in products with control code C (firmware: V1.19, GUI: V2.04) and later.

No. 14 Bug in upgrading firmware

[Description]

　　When the firmware is upgraded to V1.19 or later using programming GUI V2.02 or earlier, the firmware
　　cannot be upgraded correctly, and after that, cannot be activated.

[Workaround]

　　Upgrade firmware using programming GUI V2.04 or later.

[Correction]

　　This issue has been corrected in products with control code C (firmware: V1.19, GUI: V2.04) and later.

No. 15 Restriction on security function of single-power-supply flash memory microcontroller

[Description]

　　The security function of the single-power-supply flash memory microcontroller is not supported. This
　　function is not activated even if the check box is selected in [Security flag after Program] on the GUI.

[Workaround]

　　There is no workaround.

[Correction]

　　This issue has been corrected in products with control code E (firmware: V1.21, GUI: V2.05) and later.

No. 16 Bug in SIO-H/S communication mode

[Description]

　　SIO-H/S communication mode cannot be used in the following devices.

　　　μPD78F9478, μPD78F9488, μPD78F0078, μPD78F0703Y, μPD78F0828B, μPD78F4216A,

　　　μPD78F4218A, μPD78F4225, μPD78F4976A, μPD78F4938A, μPD78F4967, μPD78F0988A,

　　　μPD78F0034B

[Workaround]

　　Use other than SIO-H/S communication mode when using the above devices.

[Correction]

　　This bug can be avoided by using products with control code E (firmware: V1.21, GUI: V2.05) or later in
　　combination with the latest parameter file.

No. 17 Bug in voltage output when power supply is turned on/off

[Description]

　　When the power supply is turned on/off, approximately 7 V of voltage is output from VPP, VDD, or VDD2.

[Workaround]

　　Remove the PG-FP4 taking care that the target is not affected by power supply turn-on/off.

[Correction]

　　This issue has been corrected in products with control code E (firmware: V1.21, GUI: V2.05) and later.

No. 18 Bug in setting checksum command in two-power-supply flash memory microcontroller

[Description]

The device Checksum command is not executed after the Program command even if the "Checksum after program" option is set on the programming GUI.

[Workaround]

There is no workaround.

Execute the device Checksum command independently after the Program command.

[Correction]

This issue has been corrected in products with control code E (firmware: V1.21, GUI: V2.05) and later.

No. 19 Bug in checksum command in two-power-supply flash memory microcontroller when operated in standalone mode

[Description]

The checksum command is not displayed in the Commands menu when the PG-FP4 is operated in the standalone mode.

[Workaround]

Execute the checksum command from the programming GUI.

[Correction]

This issue has been corrected in products with control code E (firmware: V1.21, GUI: V2.05) and later.

No. 20 Bug in downloading Motorola S-format HEX file

[Description]

When the HEX file downloaded to the PG-FP4 satisfies both the following conditions, the last data byte of the data record will not be downloaded (at this time, the data becomes the initial value FFh).

Condition 1: The file is a Motorola S-format file and its data record format is S2 or S3

Condition 2: The last data byte of the data record is an even address

Example: In the case of the data record line S20503FFFC52AA shown below, the data record format is S2 and the last data byte is 52h.

Therefore, data 52h is not downloaded and becomes FFh (initial value).

In the case of data record line S20503FFFC52AA

	Record format	Byte count	Load address	Data byte	Checksum
Data record	S2	05	03FFFC	52	AA

This bug does not occur when downloading an Intel HEX type file.

[Workaround]

There is no workaround.

[Correction]

This issue has been corrected in products with control code E (firmware: V1.23, GUI: V2.05) and later.

No. 21 The last address input for file upload differs from the one actually executed

[Description]

  The last address from which data is uploaded is decremented by one from the input address.

[Workaround]

  Increment the address input as the last address by one.

[Correction]

  This issue has been corrected in products with control code E (firmware: V1.30, GUI: V2.11) and later.

No. 22 Bug in Address display in Block/Area

[Description]

  The Address indication in the Block/Area area of the programmer parameter window is not shown if the start block or area is set to 1 when using block mode or area mode.

[Workaround]

  There is no workaround.

[Correction]

  This issue has been corrected in products with control code E (firmware: V1.30, GUI: V2.11) and later.

No. 23 Bug in execution of Update Firmware with USB 2.0

[Description]

  An error message "E316 Trying to connect Programmer failed." is displayed when Update Firmware is executed with USB 2.0. However, updating completes normally.

[Workaround]

  When this bug occurs, restart the flash programmer and programming GUI.

[Correction]

  This issue has been corrected in products with control code E (firmware: V1.31, GUI: V2.13) and later.

No. 24 Bug in cancel operation in Security flag Setting confirmation dialog box

[Description]

  When the [Cancel] button is selected in the dialog box that appears when "Disable Chip Erase" or "Disable Boot block cluster reprogramming" is selected and then the [OK] button is clicked in the Setup window, there security flag setting remains selected.

[Workaround]

  Clear the "Security flag Setting" check boxes and click the [OK] button in the Setup window.

[Correction]

  This issue has been corrected in products with control code E (firmware: V1.31, GUI: V2.13) and later.

No. 25 Bug in CLK output

[Description]

  CLK is output from the PG-FP4 even if the "On Target" check box is selected in the Supply oscillator area in the Device Setup window.

[Workaround]

  There is no workaround.

[Correction]

　This issue has been corrected in products with control code E (firmware: V1.31, GUI: V2.13) and later.

No. 26　Bug in address display in Boot block cluster setting

[Description]

　The address display is not shown correctly if the "Show Address" check box is selected when selecting the boot block in the Boot block cluster setting menu.

[Workaround]

　Use the BlockNumber display.

[Correction]

　This issue has been corrected in products with control code E (firmware: V1.31, GUI: V2.13) and later.

No. 27　Communication cannot be performed after firmware upgrade

[Description]

　It is not possible to reboot the PG-FP4 normally after firmware is upgraded from V1.23 or earlier to V1.30 or V1.31 and the PG-FP4 can no longer communicate with the target.

[Workaround]

　Re-apply power to the PG-FP4 or execute [Programmer] → [Reset] after firmware upgrade.

[Correction]

　This issue has been corrected in products with control code G (firmware: V1.32, GUI: V2.14) and later.

No. 28　Bug in output from SO/TxD, RESET, SCK pins after VDD (VDD2) output is turned off

[Description]

　A pull-up resistor for the target interface (SO/TxD, RESET, SCK) was not disconnected for approximately 30 ms after VDD (VDD2) output is turned off, so VDD (VDD2) pulled up by the SO/TxD, RESET, and SCK pins is output during this period.

[Workaround]

　There is no workaround.

[Correction]

　This issue has been corrected in products with control code G (firmware: V1.32, GUI: V2.14) and later.

No. 29　Bug in Read command when UART is used for USB communication

[Description]

　A communication error occurs if the Read command is executed when the host interface is USB and communication is performed with the target via UART.

[Workaround]

　Use a serial interface as the host interface when executing the Read command via UART.

[Correction]

　This issue has been corrected in products with control code G (firmware: V1.33, GUI: V2.15) and later.

No. 30 Bug related to power supply detection function at VDD pin

[Description]

  When on-board programming is performed using a parameter file that supports multiple signatures, with the setting that VDD is supplied from the PG-FP4, the error message "Target power detected!" is displayed in the communication log window and the writing may not be completed.

[Workaround]

  Supply power from the target system.

[Correction]

  This issue has been corrected in products with control code H (firmware: V1.34, GUI: V2.16) and later.

No. 31 Bug in LCD display

[Description]

  When dots (".") are displayed in the LCD display with a command such as the Erase command and the execution then moves to the next command, the LCD display may become garbled. The command itself, however, operates normally.

[Workaround]

  Re-apply power to the PG-FP4 after confirming the completion of the command, or execute the Reset command from the [Programmer] menu.

[Correction]

  This issue has been corrected in products with control code H (firmware: V1.34, GUI: V2.16) and later.

No. 32 File checksum command results in an error when downloading a HEX file

[Description]

  When a HEX file is downloaded, the last character "1Ah (^Z)" of the file is executed as the next command. Consequently, a file checksum command, which is executed after downloading of the file is completed, may result in an error (Command not found). There will be no problem if the execution ends normally without causing errors.

[Workaround]

  Implement either of the following workarounds.

    (1) Split the program area into two areas.

    (2) Delete "1Ah (^Z)" at the end of the HEX file using, an editor or the like.

[Correction]

  This issue has been corrected in products with control code H (firmware: V1.35, GUI: V2.16) and later.

No. 33 LED indicator does not glow red if execution of EPV command results in an error

[Description]

  If execution of the EPV command results in an error, the LED indicator does not glow red to red, but is off.

[Workaround]

  There is no workaround.

[Correction]

  This issue has been corrected in products with control code H (firmware: V1.35, GUI: V2.16) and later.

No. 34 Bug in saving Motorola S format file in HEX Editor

[Description]

  When saving a file in the Motorola S format in the HEX Editor, and the file name or folder name includes a character other than ASCII code 0x00 to 0x7F, the header of the Motorola S file becomes invalid.

[Workaround]

  There is no workaround.

[Correction]

  This issue has been corrected in products with control code H (firmware: V1.36, GUI: V2.17) and later.

No. 35 PG-FP4 hangs up under certain conditions during standalone mode

[Description]

  The PG-FP4 hangs up if commands are continuously executed using control buttons on the PG-FP4 with the PG-FP4 connected to the host PC using a USB cable but without the programming GUI being started.

[Workaround]

  Unplug the USB cable before operating the control buttons.

[Correction]

  This issue has been corrected in products with control code H (firmware: V1.36, GUI: V2.17) and later.

6. Document Correction

This section describes changes in the *PG-FP4 Flash Memory Programmer User's Manual* (document number: U15260E, 4th edition).

Page 6

Incorrect: Use at overvoltage, use outside guaranteed temperature range, storing outside guaranteed temperature range

Correct: Use under conditions other than those prescribed (e.g., use at overvoltage, use outside guaranteed temperature range, storing outside guaranteed temperature range)

Incorrect: emulation probe

Correct: target cable

Incorrect: If GND of this product was not connect to GND of the target system

Correct: If the product and target system were connected while a potential difference existed between the GND of the product and the GND of the target system

Addition to **1. Circumstances not covered by product guarantee**

- If the product is used or stored in an environment where an electrostatic or electrical noise is likely to occur

Addition to **2. Safety precautions**

- The AC adapter supplied with the product is exclusively for this product, so do not use it with other products.

Page 8

Incorrect: Naito Densei Machida Mfg. Co., Ltd. Tel: +81-45-475-4191

Correct: Naito Densei Machida Mfg. Co., Ltd. Tel: +81-42-750-4172

Page 11

Incorrect: The PG-FP4 can supply 0 to 6 V on the V_{DD} line (200 mA max.).

Correct: The PG-FP4 can supply **2.1** to 6 V on the V_{DD} line (200 mA max.).

Page 13

FP4 specifications

Item	Specifications
External dimensions	$200 \times 115 \times 46$ mm
Operating environment conditions	Temperature: ± 0 to $+40°C$ Humidity: 10% to 80%RH (no condensation)
Storage environment conditions	Temperature: -15 to $+60°C$ Humidity: 10% to 80%RH (no condensation)

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The adapter board for IIC communication mode that is included with the PG-FP4 has been changed to the IIC/78K0S/KX1+ adapter in control code G and later. In conjunction with this change, replace the following descriptions with section **2.3.9**.

2.3.9 IIC/78K0S/KX1+ adapter

The IIC/78K0S/KX1+ adapter is used to short the target interface pins when using I^2C communication mode or the 78K0S/Kx1+ (JP1 is shorted at shipment).

Figure 2-5. IIC/78K0S/KX1+ Adapter
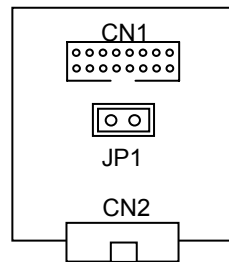
- When using I^2C communication mode

When I^2C communication mode is used and the IIC/78K0S/KX1+ adapter is not used, short the SI pin and SO pin in the target system.

Figure 2-6. Connection Diagram
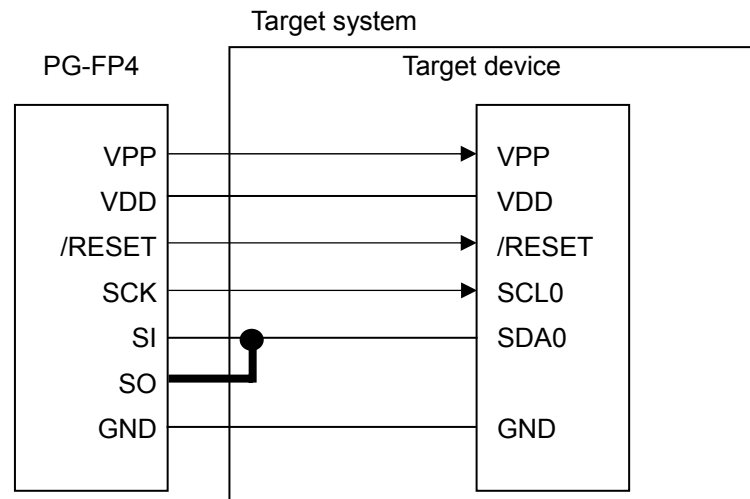
When I²C communication mode is used and the IIC/78K0S/KX1+ adapter is used, shorting the SI pin and SO pin in the target system is not required.

**Figure 2-7. Connection Diagram When Using IIC/78K0S/KX1+ Adapter**

<Usage when writing to two-power-supply flash memory microcontroller>
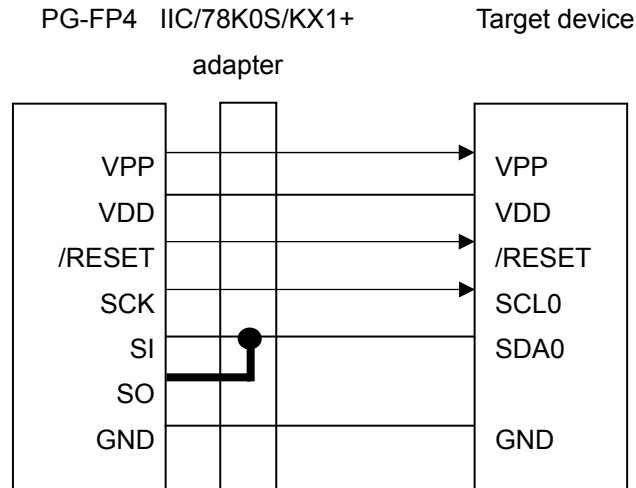
(1)   Leave JP1 open.

(2)   Connect the program adapter and target connector type B (10 pins) of the target cable.

(3)   Connect target connector type A (16 pins) of the target cable and the IIC/78K0S/KX1+ adapter (CN1).

Figure 2-8. Connection Diagram When Using IIC/78K0S/KX1+ Adapter

<Usage when writing to single-power-supply flash memory microcontroller>
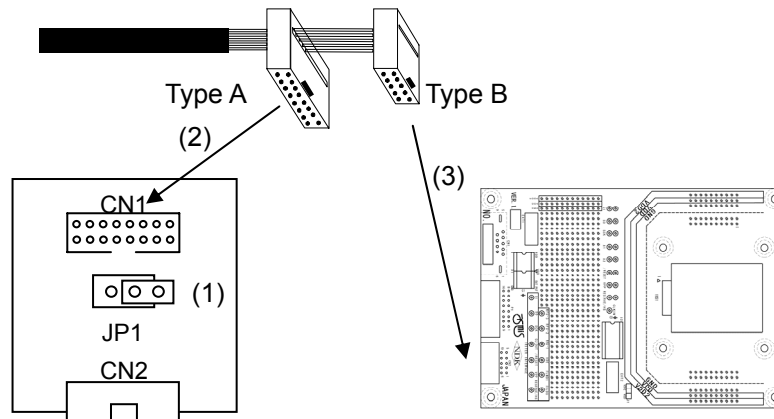
(1) Leave JP1 open.

(2) Connect target connector type A (16 pins) of the target cable and the IIC/78K0S/KX1+ adapter (CN1).

(3) Connect the program adapter and the IIC/78K0S/KX1+ adapter (CN2).

Figure 2-9. Connection Diagram When Using IIC/78K0S/KX1+ Adapter
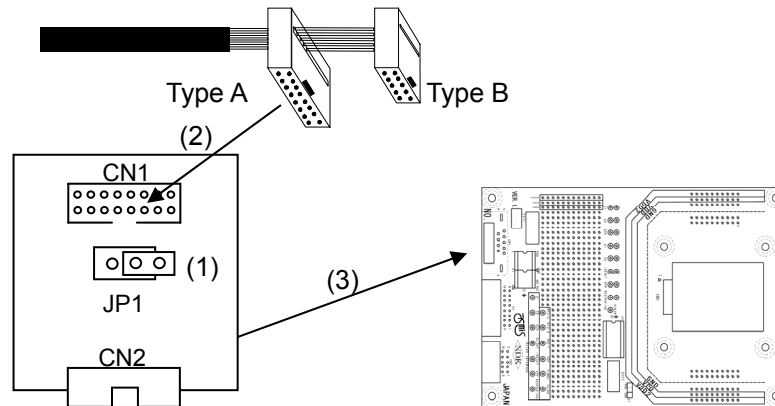
• When using 78K0S/Kx1+

When the 78K0S/KX1+ is used and the IIC/78K0S/KX1+ adapter is not used, short the SI pin and SO pin, as well as the CLK pin and FLMD0 pin in the target system.

Figure 2-10. Connection Diagram
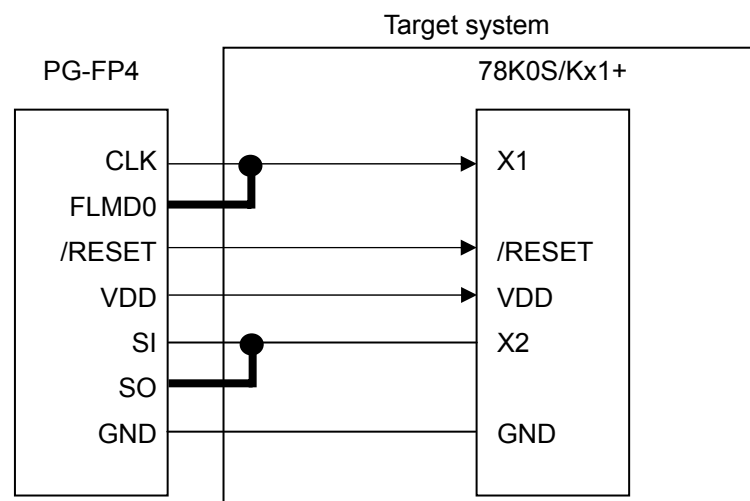
When the 78K0S/Kx1+ is used and the IIC/78K0S/KX1+ adapter is used, shorting the SI pin and SO pin, as well as CLK pin and FLMD0 pin in the target system is not required.

Figure 2-11. Connection Diagram When Using IIC/78K0S/KX1+ Adapter

<Usage when writing to 78K0S/Kx1+>
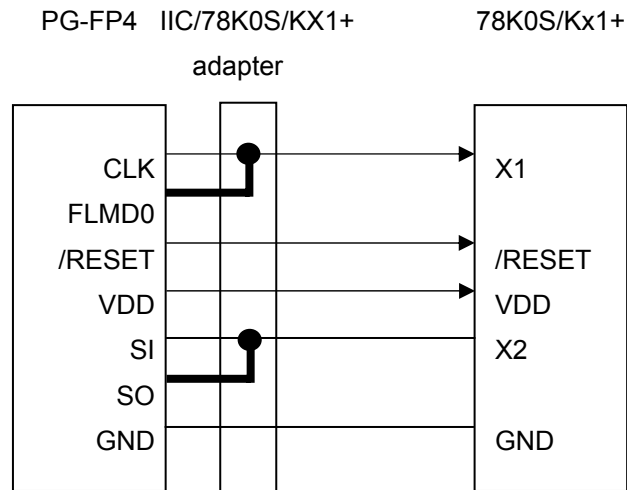
(1) Short JP1.

(2) Connect the target connector type A (16 pins) of the target cable and IIC/78K0S/KX1+ adapter (CN1).

(3) Connect the FA adapter with the IIC/78K0S/KX1+ adapter (CN2).

Figure 2-12. Connection Diagram When Using IIC/78K0S/KX1+ Adapter
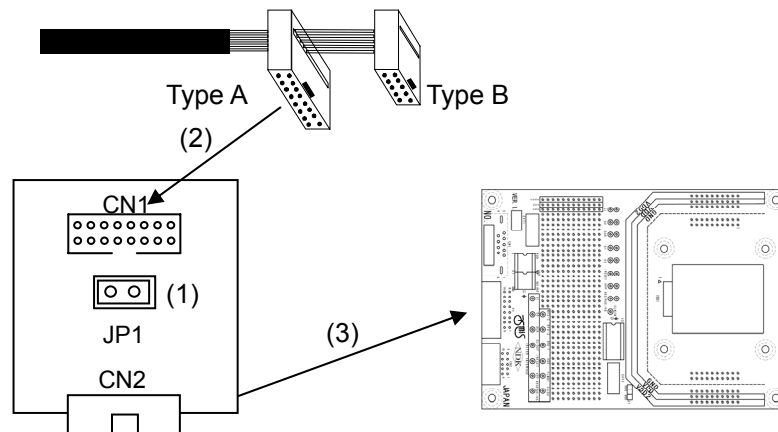
CHAPTER 4

Devices that have code flash and data flash areas are supported in products with control code H (firmware: V1.36, GUI: V2.17) and later. In conjunction with this addition, the following specifications have been changed.

(1) Programmer parameter window layout

GUI V2.16   GUI V2.17 and later

(2) Operation range display area

Mode	Devices Not Supporting Data Flash	Devices Supporting Data Flash
Chip	Operation range Mode: Chip Range: ------ Range: ------	Operation range Mode: Chip Range: ------ Range: ------
Block	Operation range Mode: Block Range: Block 0 - 1 Range: ------	Operation range Mode: Block Range: Code BL 0 - 127 Range: Data BL 0 - 15
Block Address	Operation range Mode: Block Range: Address 000000 - 07FFFF Range: ------	Operation range Mode: Block Range: Code AD 000000 - 07FFFF Range: Data AD 400000 - 407FFF

(3) [Checksum] menu specifications

When [Checksum] in the [File] menu is executed, the window display varies depending on whether or not the downloaded parameter file supports the data flash area.
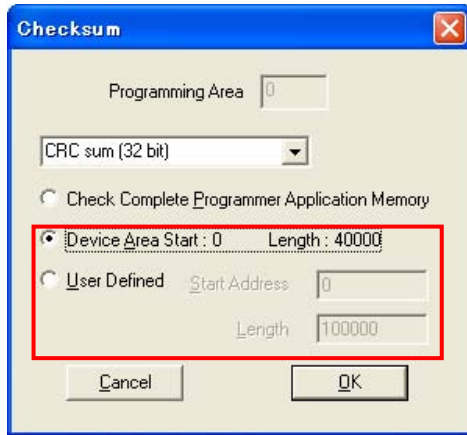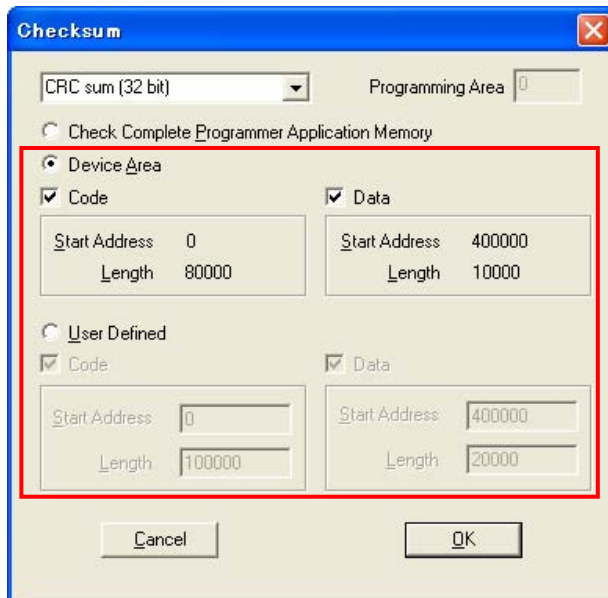
<When a parameter file that does not support the data flash area is downloaded>

After clicking the OK button, the following information will be displayed in the File Checksum area of the programmer parameter window.

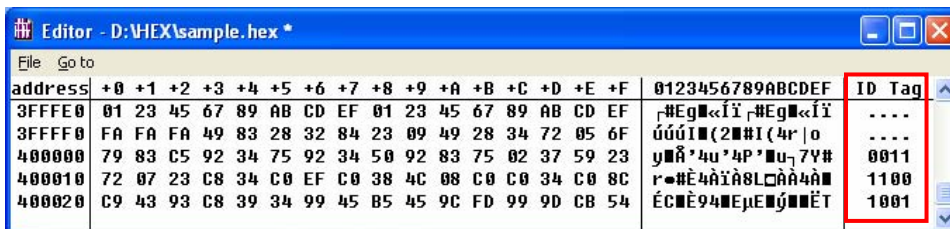<When a parameter file that supports the data flash area is downloaded>

After clicking the OK button, the following information will be displayed in the File Checksum area of the programmer parameter window.

File Checksum
Type: CRC sum (32 bit)
Code flash: A5F81C7E (000000-07FFFF)
Data flash: 8D812A84 (400000-40FFFF)
Total: F4D11DAE

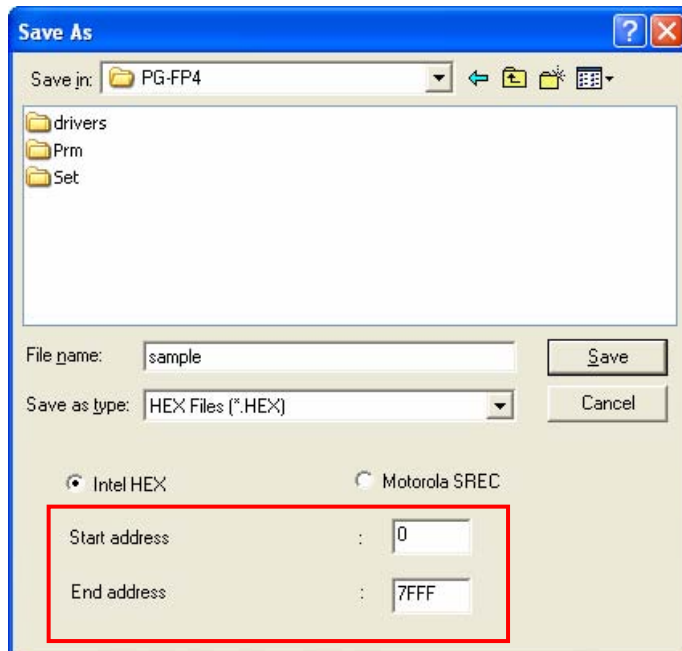(4) [HEX Editor] menu specifications

An ID Tag row has been added to the [HEX Editor] in the [File] menu. The ID Tag row is used in microcontrollers that support the data flash area. Only the values at addresses 400000h and beyond can be edited in the ID Tag row.
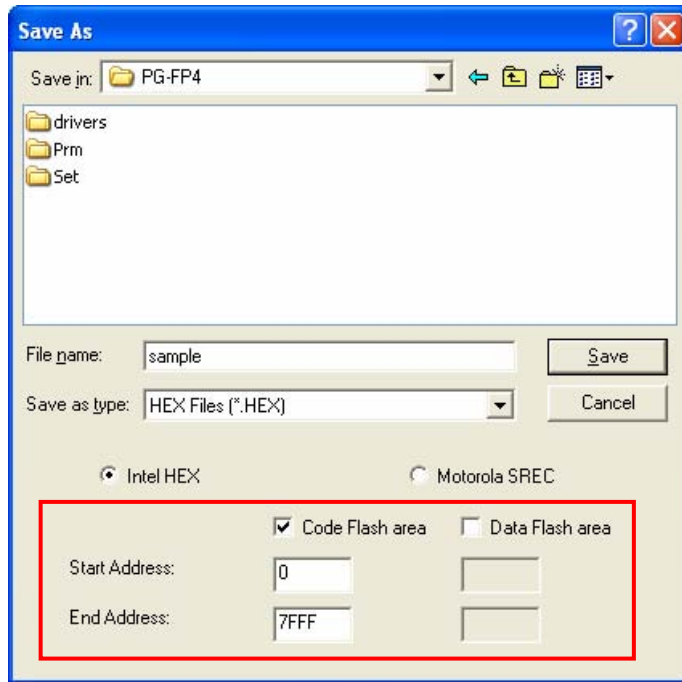
Editor - D:\HEX\sample.hex *
File Go to

address	+0 +1 +2 +3 +4 +5 +6 +7 +8 +9 +A +B +C +D +E +F	0123456789ABCDEF	ID Tag
3FFFE0	01 23 45 67 89 AB CD EF 01 23 45 67 89 AB CD EF	┌#Eg█«ÍÏ┌#Eg█«ÍÏ	....
3FFFF0	FA FA FA 49 83 28 32 84 23 09 49 28 34 72 05 6F	úúúI█(2█#I(4r|o	....
400000	79 83 C5 92 34 75 92 34 50 92 83 75 02 37 59 23	y█Å'4u'4P'█u┐7Y#	0011
400010	72 07 23 C8 34 C0 EF C0 38 4C 08 C0 C0 34 C0 8C	r•#È4ÀÏÀ8L□ÀÀ4À█	1100
400020	C9 43 93 C8 39 34 99 45 B5 45 9C FD 99 9D CB 54	ÉC█È94█EµE█ý██ËT	1001

When a parameter file is downloaded using the [HEX Editor] and the file is saved as, the available options in the [Save As] window vary depending on whether or not the downloaded file supports the data flash area.

<When a parameter file that does not support the data flash area is downloaded>

Save As

Save in: PG-FP4

drivers
Prm
Set

File name: sample   Save

Save as type: HEX Files (*.HEX)   Cancel

◉ Intel HEX   ○ Motorola SREC

Start address   : 0

End address   : 7FFF

<When a parameter file that supports the data flash area is downloaded>

Save As

Save in: PG-FP4

- drivers
- Prm
- Set

File name: sample

Save as type: HEX Files (*.HEX)

Save

Cancel

○ Intel HEX   ○ Motorola SREC

☑ Code Flash area   ☐ Data Flash area

Start Address: 0

End Address: 7FFF

Supplement Data is stored into the data flash area as follows.

<Editor>

address	+0	+1	+2	+3	+4	+5	+6	+7	+8	+9	+A	+B	+C	+D	+E	+F	ID Tag
400000	00	11	22	33	44	55	66	77	88	99	AA	BB	CC	DD	EE	FF	1 1 0 0

<Program file saved>

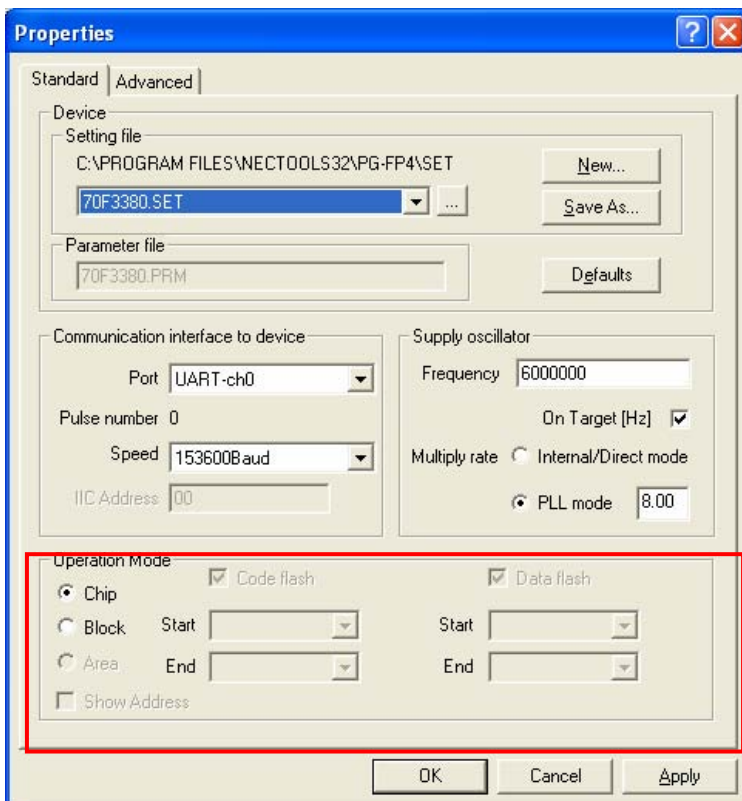| address	Data Flash				ID Tag				Data Flash				ID Tag			
400000h	00	11	22	33	FF	FF	FF	FF	44	55	66	77	FF	FF	FF	FF
400001h	88	99	AA	BB	00	00	00	00	CC	DD	EE	FF	00	00	00	00

(5) Specifications for Standard tab in Device Setup window

The available options on the Standard tab in the Device Setup window vary depending on whether or not the downloaded file supports the data flash area.
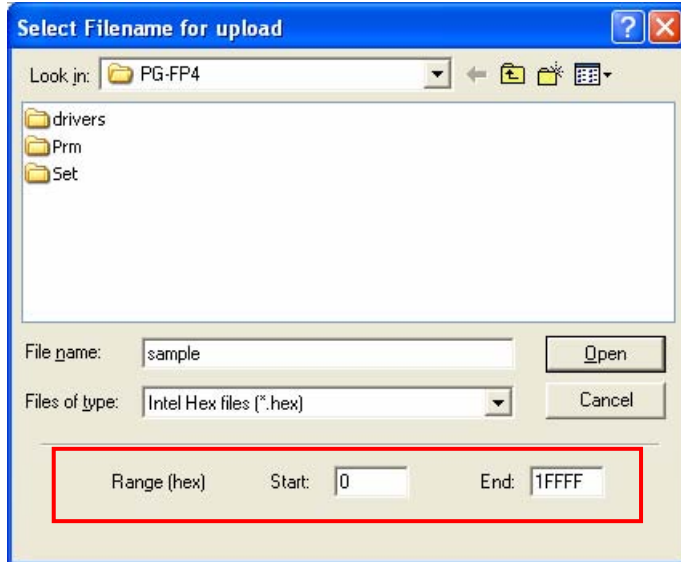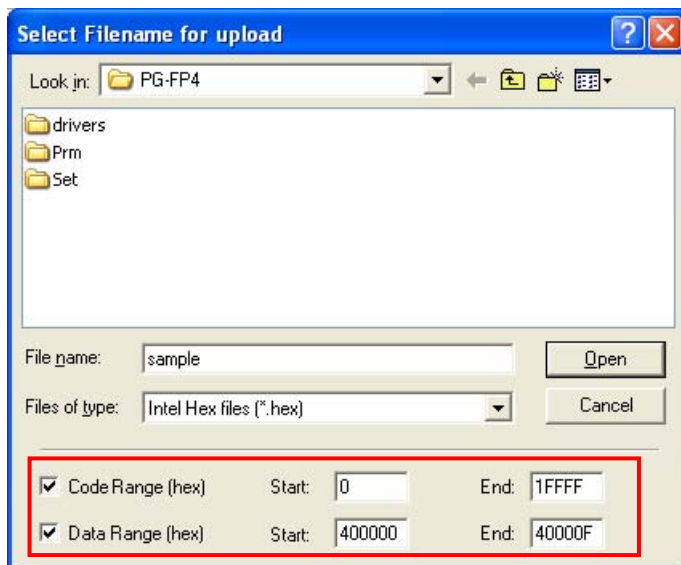
<When a parameter file that does not support the data flash area is downloaded>

<When a parameter file that supports the data flash area is downloaded>
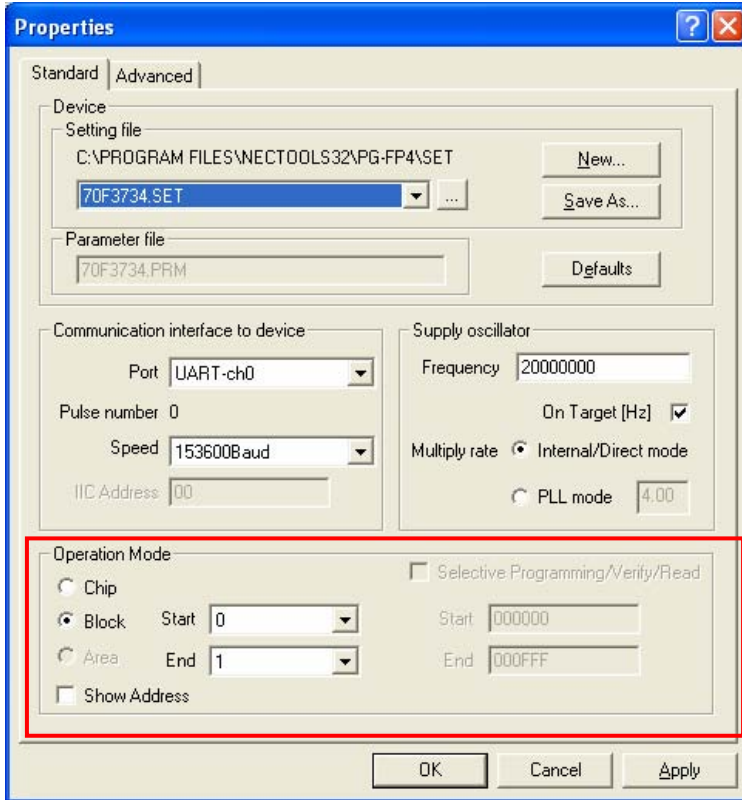
(6) [Upload from FP4] menu specifications

   The available options in the "Select Filename for upload" window vary depending on whether or not the downloaded file supports the data flash area.

     <When a parameter file that does not support the data flash area is downloaded>

     <When a parameter file that supports the data flash area is downloaded>

Caution Specify twice the required for the data range in order to accommodate the ID tag data.

       Example: When uploading 16 bytes of data flash data from address 400000, specify 32 bytes.

             Start: 400000   End: 40001F

<Program file saved>

| address	Data Flash				ID Tag				Data Flash				ID Tag			
40000xh	00	11	22	33	FF	FF	FF	FF	44	55	66	77	FF	FF	FF	FF
40001xh	88	99	AA	BB	00	00	00	00	CC	DD	EE	FF	00	00	00	00

CHAPTER 4

The 78K0R microcontrollers are supported in products with control code H (firmware: V1.36, GUI: V2.17) and later. In conjunction with this addition, the following boot block settings have been added.

Layout of Advanced tab in Device Setup window

GUI V2.16   GUI V2.17 and later
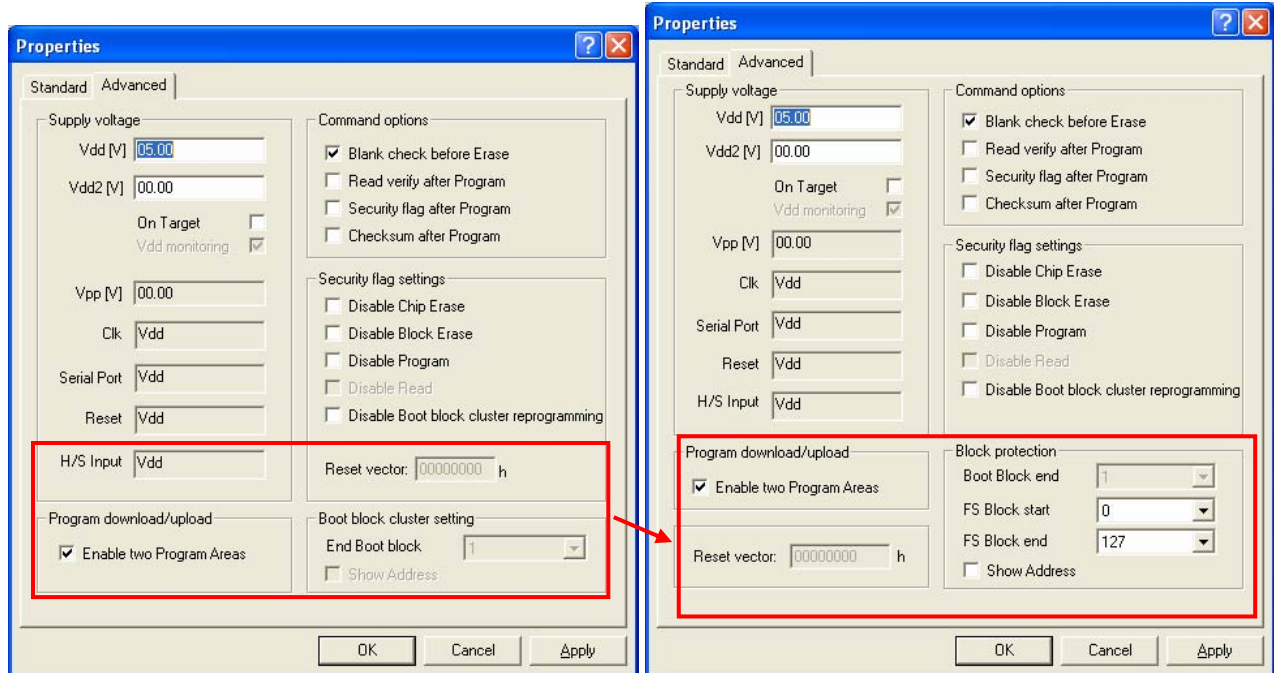
[Reset vector] text box

When the [Security] command is executed with an arbitrary address value specified in this text box, the reset vector will be changed to the specified address. This setting is cleared when the [Erase] command is executed with the "Chip" option specified in the Operation Mode area on the Standard tab. The initial value is 00000000h.

[Boot Block end] drop-down list

Specify the block number from this list. This box shows the block numbers configured by the target device.

[FS Block start] and [FS Block end] drop-down lists

Specify the block numbers from these lists. The boot protection function is a function used to prevent the areas out of the specified range from being written to during flash memory self programming by mistake. These lists show the block numbers configured by the target device.

Addition of cautions as appendix

APPENDIX A CAUTIONS

This chapter describes cautions on using the PG-FP4. For other restrictions and cautions, refer to *PG-FP4 Operating Precautions*.

No. 1 Operating clock of target microcontroller

It is recommended to supply the operating clock for the target microcontroller from the target system.
If the operating clock for the target microcontroller is output from the flash programmer, communication may not be performed normally because the output waveform is distorted due to the clock line routing of the target system. In such a case, insert a device such as the CMOS buffer in the target system to shape the waveform, if necessary.

No. 2 Caution on SIO-H/S communication mode (1)

When using the device shown below in SIO-H/S communication mode, use a **CPU clock of 2 MHz or higher**; otherwise, a timeout error may occur when the Verify command is executed individually.

    Affected devices: μPD78F0034BY, μPD78F0703Y, μPD78F0988A, μPD78F9478, μPD78F9488, μPD78F4218A, μPD78F0354

No. 3 Caution on SIO-H/S communication mode (2)

Use the μPD78F0078 in SIO-H/S communication mode under the following conditions.

- **Use a CPU clock of 2 MHz or higher**.
- **Pull up the H/S pin. (Recommended pull-up resistor value: 4.7 kΩ)**

No. 4 Caution on SIO communication mode

When the operating clock is supplied to the μPD78F9468 from the flash programmer**, shape the waveform of the SCK pin using a circuit such as CMOS buffer**; otherwise communication may not be performed normally.

No. 5 Caution on connecting target cable

The target system and flash programmer may be damaged when they are connected in a system in which the voltage potential between the target GND and flash programmer GND differ. Therefore, set these GND to same voltage before connecting the target cable.

No. 6 Security flag settings in 78K0S/Kx1+

When a security flag setting is made in the Security flag settings menu in the 78K0S/Kx1+ and the [Security] command is executed, the flag is set to the target device but the setting is not valid unless VDD is turned off. To make the security flag settings valid, turn off VDD of the target system if VDD is supplied from the target system ("On Target" is selected in the Device Setup window).

No. 7 Optional products^{Note}

The following products are available for use in combination with the PG-FP4.

<Program adapter (FA series)>

An adapter used for writing to a device before it is mounted in the target system.

<FA-CON9>

A conversion board (for D-sub 9-pin connector) used for directly connecting the FA series and PG-FP4 without using the target cable supplied with the PG-FP4.

<FA-CON16>

A conversion board (for 16-pin connector) used for directly connecting the FA series and PG-FP4 without using the target cable supplied with the PG-FP4.

<FA-CLIP>

A clip-type target cable for the PG-FP4.

Note These are products of Naito Densei Machida Mfg. Co., Ltd.
Contact: ASMIS sales department TEL: +8-42-750-4172

No. 8 When output from Vdd or Vdd2 is 2.0 V or lower

[Description]

If Vdd or Vdd2 is set as a programmer output when using a device with Vdd or Vdd2 of 2.0 V or lower, a power failure error occurs due to an insufficient power supply.

[Workaround]

When setting Vdd or Vdd2 to 2.0 V or lower, supply Vdd or Vdd2 from the external power supply, select the "On Target" check box in the "Supply voltage" area in the Device Setup window.

Regard this item as a permanent restriction.