User's Manual

PG-FP6 Gang Programmer V1.00

User's Manual

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How to Use This Manual

1. Purposes and Target Readers

The purpose of this manual is to give users an understanding of the basic specifications and correct use of the PG-FP6 gang programming software. This manual is intended for users who are using the flash programmer in designing and developing a system that employs a Renesas Electronics microcontroller equipped with on-chip flash memory.

It is assumed that the readers of this manual have a basic knowledge of microcontrollers and Windows, and some knowledge of electrical and logic circuits.

Use this software after sufficiently confirming the manual of the microcontroller in use.

2. Conventions

- Note: Footnote for item marked with “Note” in the text.
- Caution: Information requiring particular attention
- Remark: Supplementary information
- Numeral representations: Binary ... xxxx or xxxxB
  Decimal ... xxxx
  Hexadecimal ... 0xXXXX or xxxxH
- “ ”: Any character or item on the screen that can be selected or input
- [ ]: Name of a button
- [ ]: Name of a command, dialog box, tabbed page, option, or area on the screen

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1. Overview

This user's manual describes the specifications of the PG-FP6 gang programming software (hereafter referred to as the GFP).

The GFP is a software product that is used to operate multiple PG-FP6 (hereafter referred to as the FP6) units for erasing, writing, and verifying programs in multiple flash memory units at the same time.

Be sure to read this user's manual along with the latest user's manual for the FP6.

1.1 Features

The following describes the features of the GFP.

- Writing programs at the same time by controlling up to 12 FP6 units from a PC
- Bundled downloading of a set of setting files and files for programming to each connected FP6
- Display of the states of operation of each FP6 unit and the numbers of passes or errors

1.2 GFP System Configuration

The system configuration of the GFP is shown below.

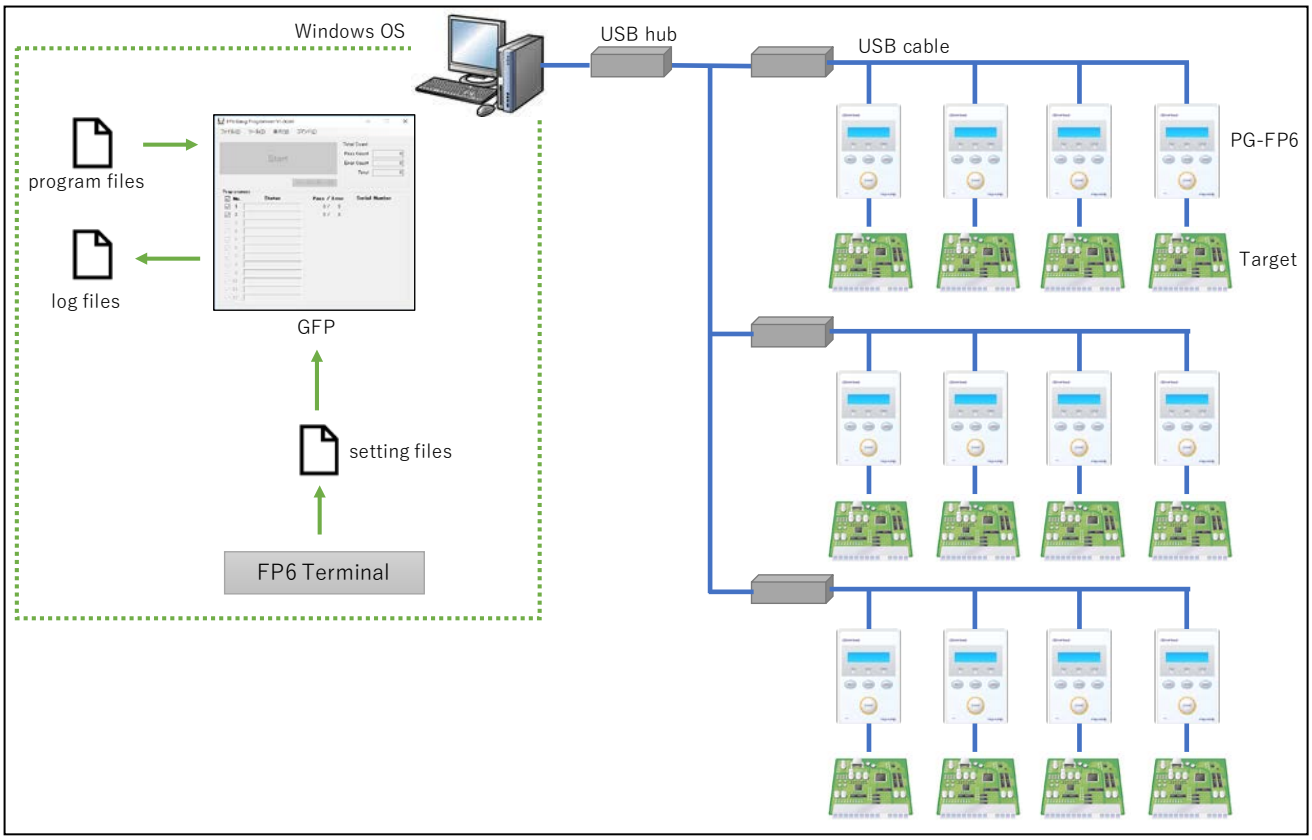

Figure 1 Image of GFP Connection

1.3 Operating Environments

1.3.1 Hardware environment

- Host PC
  - Processor: At least 1 GHz
  - Main memory: We recommend at least 2 GB.
    At least 1 GB (or at least 2 GB for 64-bit editions of Windows OS) is required.
  - Display: Resolution should be at least 1024 x 768.
  - Interface: USB 2.0 or serial interface (RS-232C)

1.3.2 Software environment

- Operating System
  - Windows 7 (32-bit edition, 64-bit edition)
  - Windows 8.1 (32-bit edition, 64-bit edition)
  - Windows 10 (32-bit edition, 64-bit edition)
- Also Required
  - Microsoft .NET Framework 4.5.2

2. Example of Operations with the GFP

This chapter describes a series of examples of the use of the GFP in basic operations with two FP6 units connected. For details on the functionality, refer to chapter 3, Description of Functionality.

For points of caution regarding operations, be sure to read the user's manual for the FP6.

The operation steps described in this chapter are as follows.

2.1 Creating a Setting File

2.2 Connecting the FP6 Units to the Host PC and the Target Systems

2.3 Starting the GFP

2.4 Setting the [Programmer Setup] Dialog Box

2.5 Executing Commands

2.6 System Shutdown

2.1 Creating a Setting File

Use the FP6 Terminal to create a setting file for storing setting information on the method of connection with the target MCU. Regarding how to create a setting file, refer to the user's manual for the FP6. After creating the setting file, close the FP6 Terminal.

2.2 Connecting the FP6 Units to the Host PC and the Target Systems

Connect the two FP6 units which are to be used to the host PC. After that, connect the FP6 units to the target systems.

2.3 Starting the GFP

Click on the [Start] menu and select [PG-FP6 Gang Programmer] to start the GFP.

2.4 Setting the [Programmer Setup] Dialog Box

After the GFP is started and the [Programmer Setup] dialog box is opened, make the settings in steps 1 to 5 below. When you start the GFP the second and subsequent times, the [Programmer Setup] dialog box may not automatically open. If the settings are changed, select [Setup] from the tool menu.

1. Specify "2" as the number of FP6 units to be connected for (A) [Connections] in the [Connection] group box.
2. Click on (B) the [Connect] button to connect the GFP to the FP6 units.
3. Click on (C) the [Download] button in the [All Programmer Operation] group box to open the [Download] dialog box.
4. Specify (D) the setting file and (E) program file on the [Download] dialog box and click on (F) the [Download] button.
5. Click on (G) the [OK] button in the [Programmer Setup] dialog box.

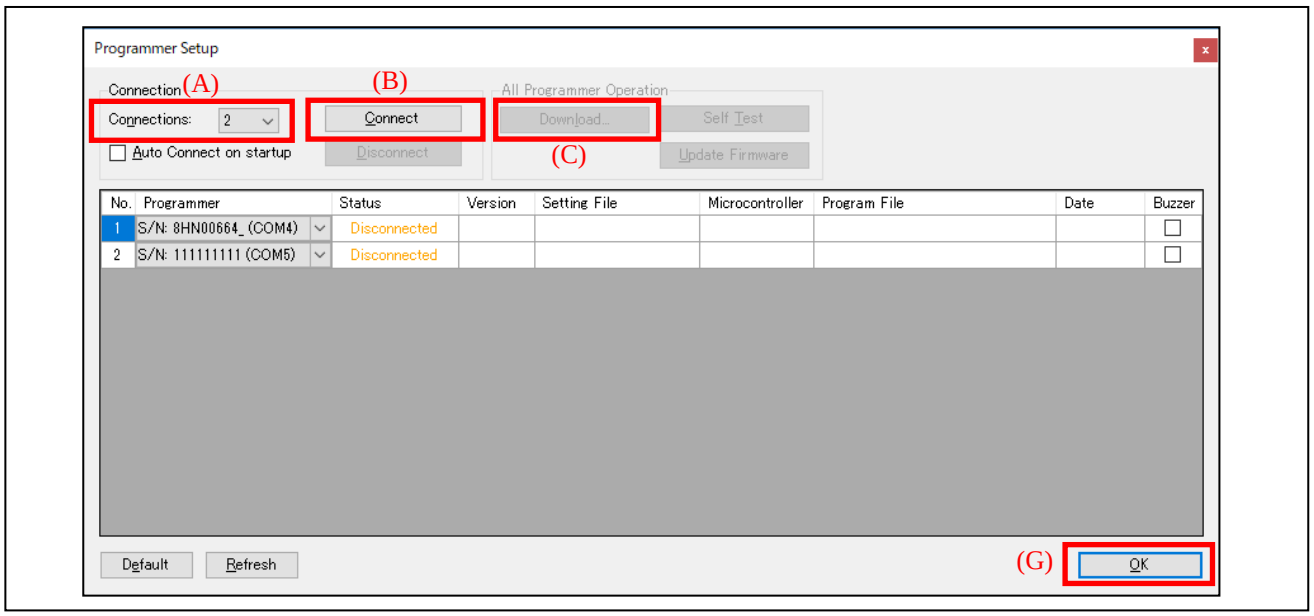

Figure 2 [Programmer Setup] Dialog Box (Example of Operating the GFP)

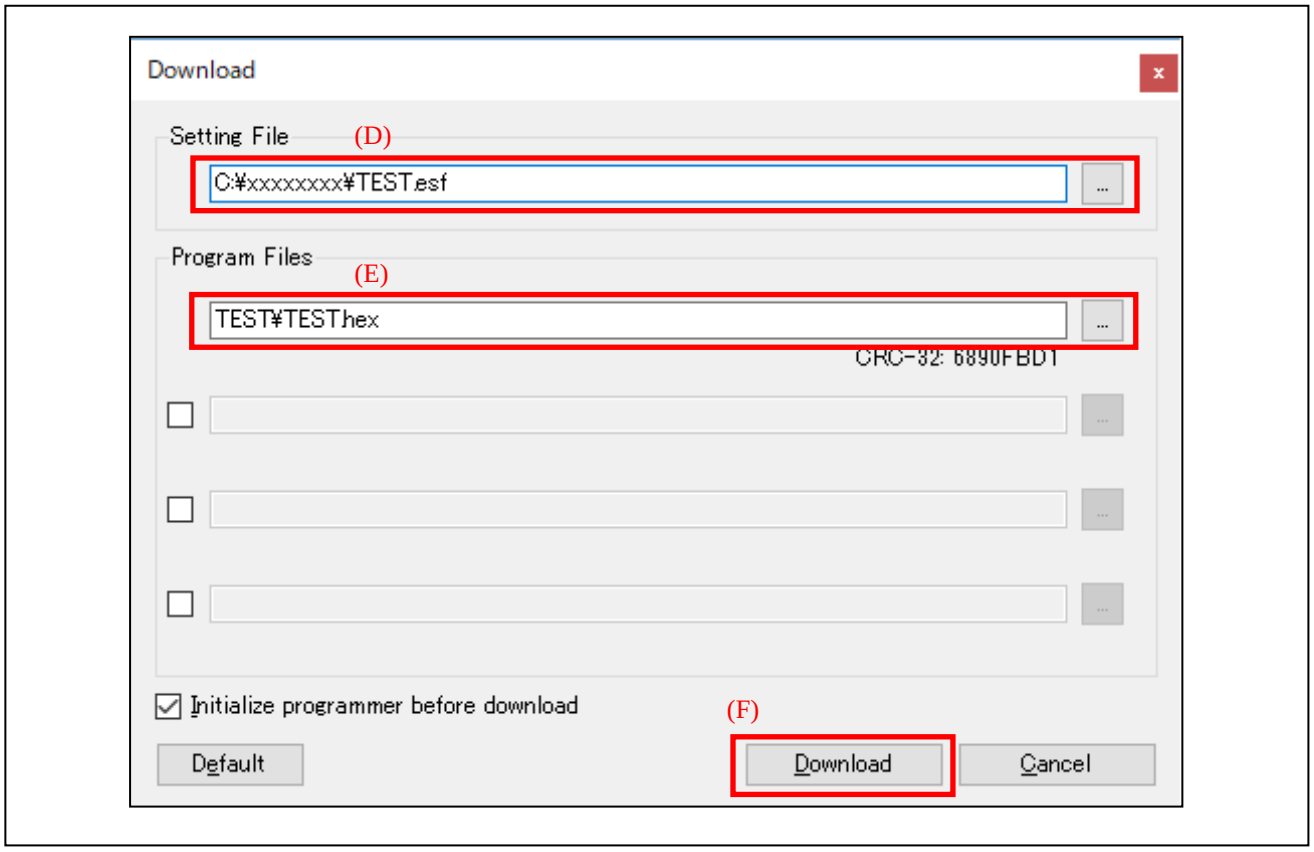

Figure 3 [Download] Dialog Box (Example of Operating the GFP)

2.5 Executing Commands

Click on the [Start] button in the main window to execute commands. After you have clicked on the [Start] button, commands specified in the setting file for the target MCU will be executed. For details on the main window, refer to section 3.1, Main Window.

When commands are successfully executed, “Pass” is shown under (A) [Status] in the [Programmers] group box. In (B) the [Total Count] group box, the total number of commands that have successfully been executed is shown against [Pass], and the sum of [Pass] and [Error] is shown against [Total].

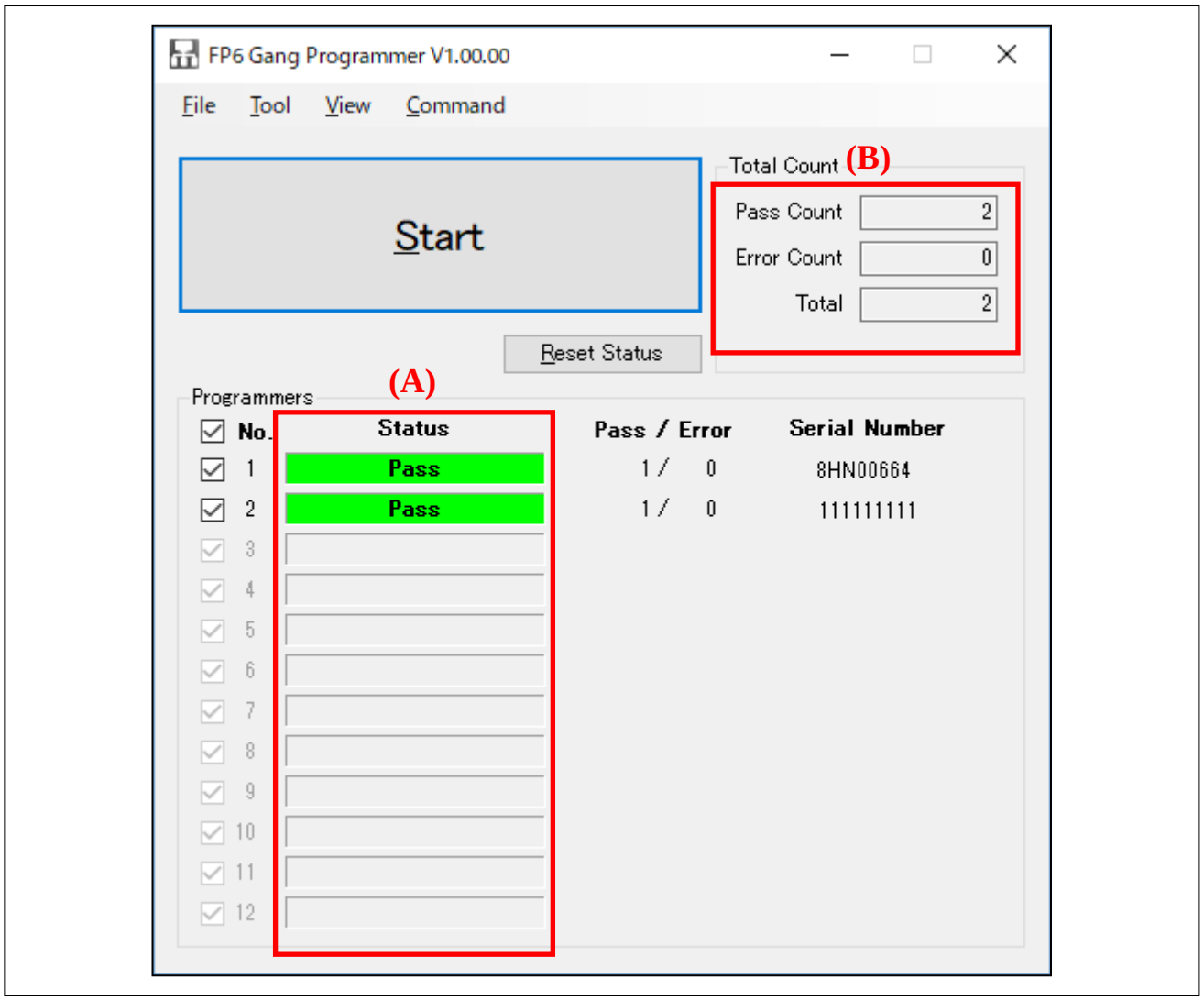

Figure 4 Main Window (Example of Operating the GFP)

2.6 System Shutdown

Remove the target system from the target cable.

Note: When Vcc is supplied from the target system, turn the power off before removing the target system.

Execute the [Exit] command from the [File] menu to close the GFP.

3. Description of Functionality

This chapter describes the configuration of the windows, dialog boxes, and other facilities of the GFP.

3.1 Main Window

The main window of the GFP that has been started up is shown below.

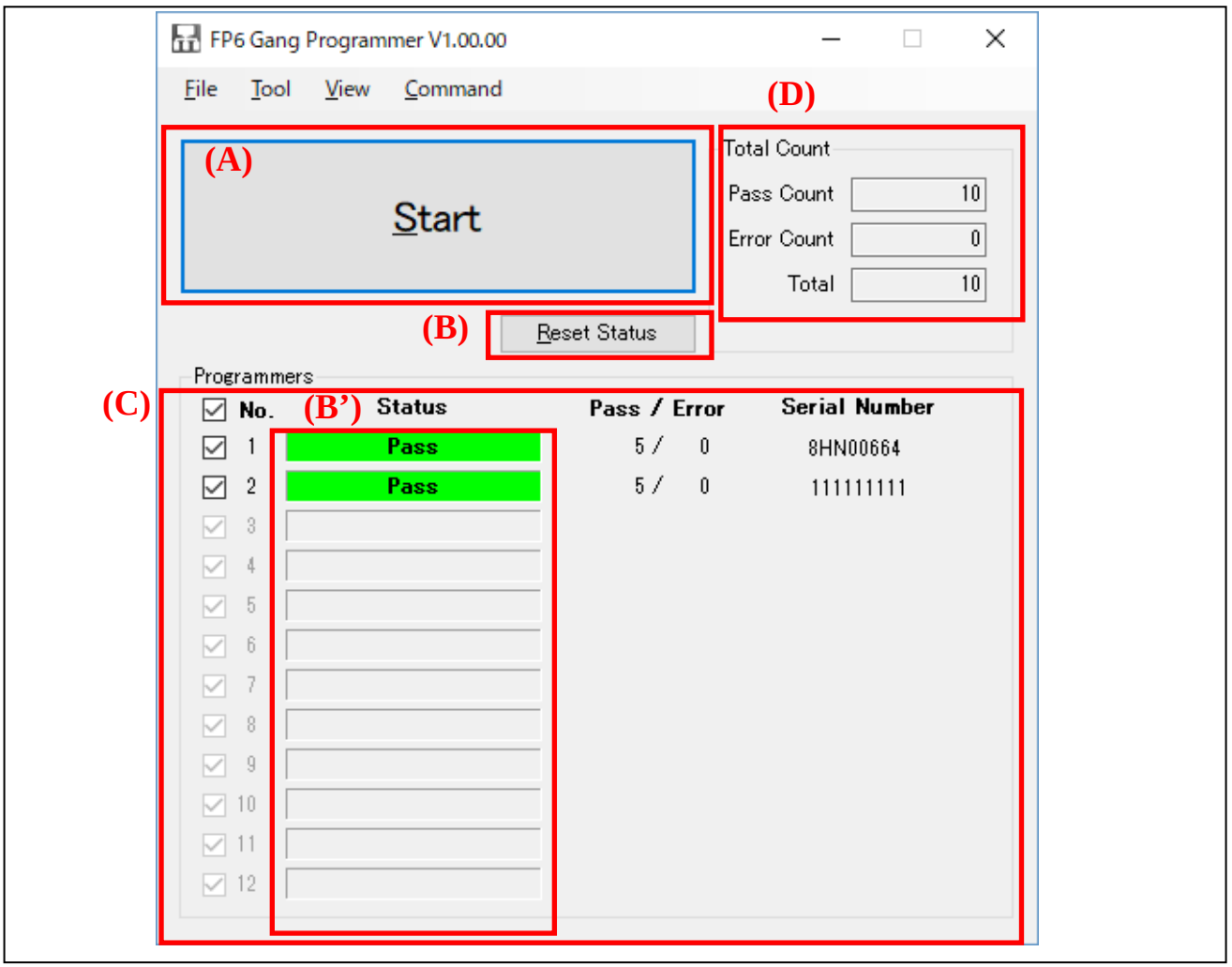

Figure 5 Main Window

3.1.1 (A) [Start] button

Execute a command that has been specified with the FP6 Terminal for the selected FP6.

The operation of the [Start] button is switchable by [Command] in the menu bar.

The [Start] button is not available in the following cases.

- The GFP is disconnected from the FP6.
- The FP6 that is the target for the operation is not selected.
- The operation is prohibited due to a specified option limiting the available operations.
  For specifying options, refer to section 3.5, [Options] Dialog Box.

3.1.2 (B) [Reset Status] button

Clear the results of execution shown in (B') [Status].

3.1.3 (C) [Programmers] group box

The following describes items in the [Programmers] group box.

Table 1 [Programmers] Group Box

Item	Description
Suspend check boxes	Specifies each FP6 unit to operate in response to the [Start] button. • Selected: This FP6 is to be used (default). • Cleared: This FP6 is suspended.
No.	Number assigned by the GFP to each FP6 unit. These numbers match those in the [Programmer Setup] dialog box.
State	Shows the state of each FP6 unit. Clicking on this item causes the LCD of the given FP6 to blink, but this is only supported if the version of the FP6 firmware is V1.03.00 or later.
Pass	Shows the total number of commands that have successfully been executed in response to clicking on the [Start] button. These counters are cleared when the GFP is closed.
Error	Shows the total number of commands have unsuccessfully been executed by the given FP6 in response to clicking on the [Start] button.These counters are cleared when the GFP is closed.
Serial Number	Shows the serial number of each FP6 unit that is connected.

3.1.3.1 [Status]

The following describes the items under [Status].

Table 2 Items in [Status]

Status	Description
	The initial state, unused state, or state after selecting [Disconnect] from the [Tool] menu.
Connecting...	The GFP is being connected to the FP6.
Ready	The GFP has been connected to the FP6 and is in the ready state.
Busy	Processing is in progress.
Erasing...	The erasing command is being executed.
Programming...	The programming command is being executed.
Verifying...	The verifying command is being executed.
Pass	Processing was successfully completed after execution of the commands.
Error (Exxx)	Processing failed after execution of the commands.
Communication Error	A communications error between the GFP and the FP6 was generated. Re-connect the FP6.
Suspended	The suspend check box for the given FP6 is deselected so the unit is suspended.

3.1.4 (D) [Total Count] group box

This group box shows the total numbers of passes and errors.

3.2 Menu Bar

3.2.1 File Menu

The following describes the items under [File].

Table 3 File Menu

Item	Description
View Log File	Shows the contents of a log file. This item is only available if logging is enabled.
Exit	Closes the GFP.

3.2.2 Tool Menu

The following describes the items under [Tool].

Table 4 Tool Menu

Item	Description
Setup…	Shows the [Programmer Setup] dialog box. This dialog box is used for finding the FP6 units, managing the connections, and configuring operations applicable to all of the connected FP6 units.
Connect	Connect the FP6 units.
Disconnect	Disconnect the FP6 units.
Options…	Shows the [Options] dialog box. The operation of the GFP as a whole can be specified in the dialog box produced by selecting this item.

3.2.3 View Menu

The following describes the items under [View].

Table 5 View Menu

Item	Description
Output Window	Shows the [Output] window. In this window, details of communications with the FP6 units which are currently connected can be confirmed.
Reset Count and Status	Clears the results of execution by the [Start] button and resets the counters for passes and errors.

3.2.4 Command Menu

The following describes the items under [Command].

Table 6 Command Menu

Item	Description
Start	The selected command can be executed with the [Start] button in the main window.
Erase	
Verify	

3.3 [Programmer Setup] Dialog Box

This section describes the [Programmer Setup] dialog box. This dialog box is used for finding the FP6 units, managing the connections, and configuring operations applicable to all of the connected FP6 units.

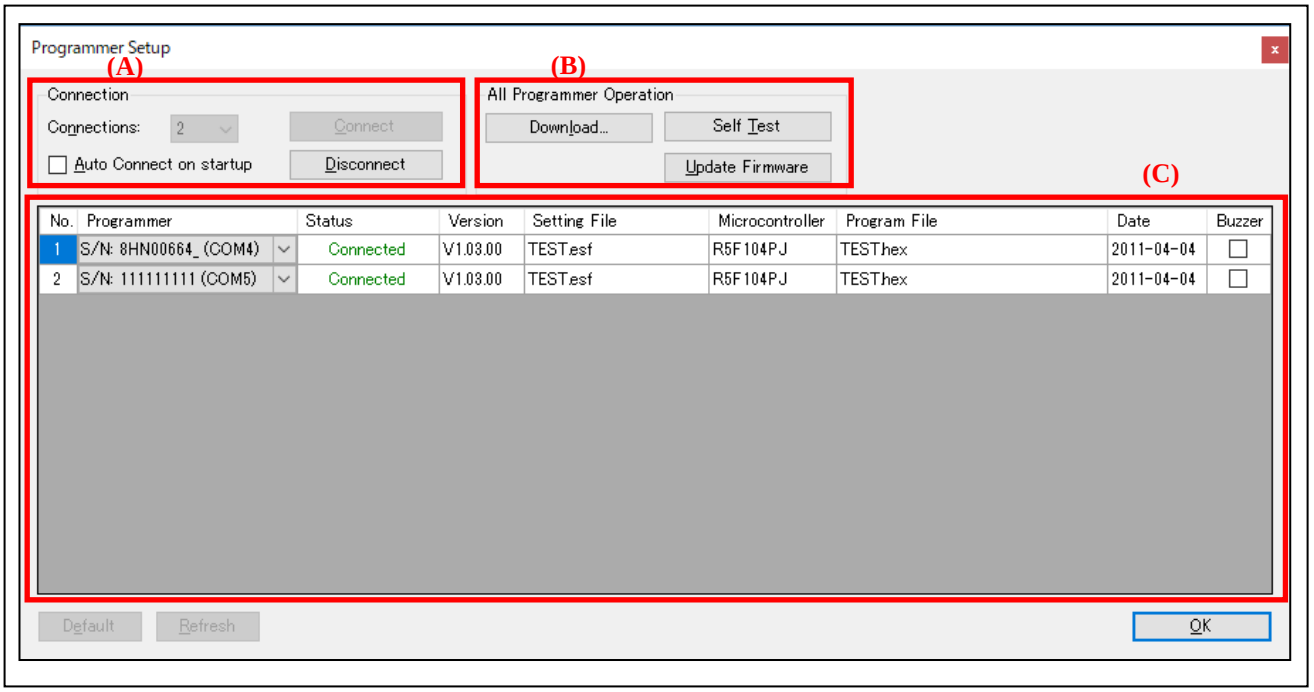

Figure 6 [Programmer Setup] Dialog Box

3.3.1 (A) [Connection Settings] group box

The following describes the items in the [Connection Settings] group box.

Table 7 [Connection] Group Box

Item	Description
Connections	Specify the number (1 to 12) of FP6 units to be connected.
Auto Connection on startup	Selecting this check box causes automatic connection of the FP6 units when the GFP is started.
Connect	Connect the FP6.
Disconnect	Disconnect the FP6.

3.3.2 (B) [All Programmer Operation] group box

The following describes the items in the [All Programmer Operation] group box. These items are only available in the connected state.

Table 8 [All Programmer Operation] Group Box

Item	Description
Download	Shows the [Download] dialog box. In this dialog box, setting files and files for programming can be downloaded for the FP6 units that are connected.
Self Test	Runs a self-test of the connected FP6 units.
Update Firmware	Updates the firmware of the connected FP6 units.

3.3.3 (C) [Programmer] list

This list shows the connection state of the FP6 which can be changed if the state is “Disconnected”. The following describes the items in the [Programmer] list.

Table 9 [Programmer] List

Item	Description
No.	Shows sequential numbers for each of the FP6 units, starting from 1.
Programmer	Selects the FP6 to be connected. To show actual COM ports rather than only serial-through-USB connections, select [Allow COM port connection] in the [Options] dialog box.
Status	Shows the state in terms of connection.
Version	Shows information on the FP6 if it is connected.
Setting File	
Microcontroller	
Program File	
Date	
Buzzer	Specifies whether the buzzer of the given FP6 if it is connected is on or off. • Selected: The buzzer is used. • Cleared: The buzzer is not used.

3.3.4 [Default] button

This button is used to restore the settings of the [Programmer Setup] dialog box to the state when the GFP was started.

3.3.5 [Refresh] button

This button is used to find the FP6 units again and re-assign the [Programmer] list.

3.4 [Download] Dialog Box

This dialog box is used to download a setting file and files for programming to the FP6 units.

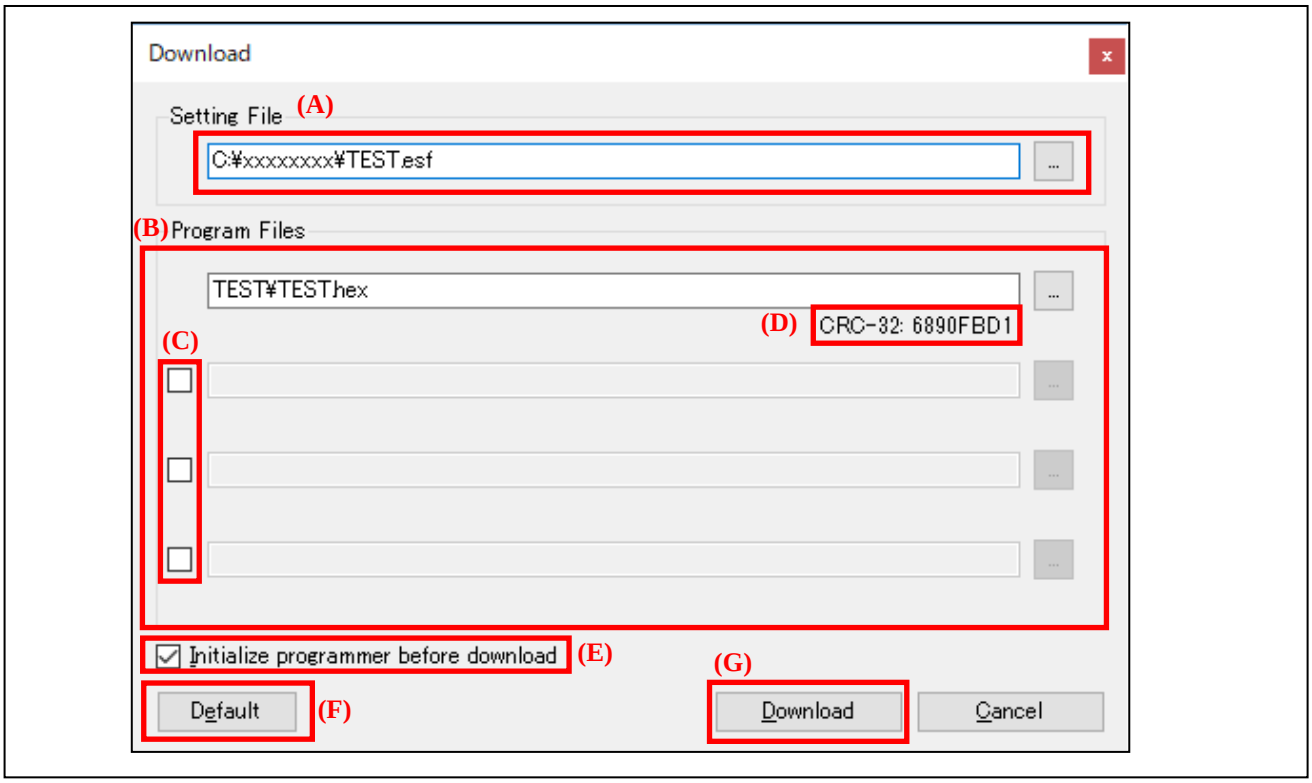

Figure 7 [Download] Dialog Box

3.4.1 (A) Setting file

Specify the setting file for downloading to the FP6 units. Click on the browse button to select the file.

3.4.2 (B) Program files

Specify files for programming to be downloaded to the FP6. Click on the browse button to select the files.

Note: With the GFP, even if HCUHEX and RPI files are selected, the setting of the flash option for the setting file created in the FP6 Terminal takes precedence. When creating a setting file in the FP6 Terminal, include the setting to suit HCUHEX or RPI files, depending on which you will be using.

3.4.3 (C) Check boxes for selecting multiple files

When a check box is selected, the corresponding [Browse] button becomes selectable. You can select multiple program files in this way.

Note: Multiple DDI, HCUHEX, or RPI files cannot be selected.

3.4.4 (D) CRC-32

The checksum (CRC-32) of the selected file is displayed.

Note: This checksum is calculated from the entire file including a linefeed code. Therefore, it does not match the checksum acquired from the target MCU.

3.4.5 (E) [Initialize programmer before download] check box

When this check box is selected, the FP6 is initialized before downloading proceeds.

3.4.6 (F) [Default] button

The setting of this dialog box is restored to the state when the GFP was started.

3.4.7 (G) [Download] button

Downloading to the FP6 units proceeds. When downloading has been successful, the contents of the dialog box are saved and it is closed.

3.5 [Options] Dialog Box

This dialog box is selected from the [Tool] menu and is used to set options for GFP operations.

The following describes the items in the [Options] dialog box.

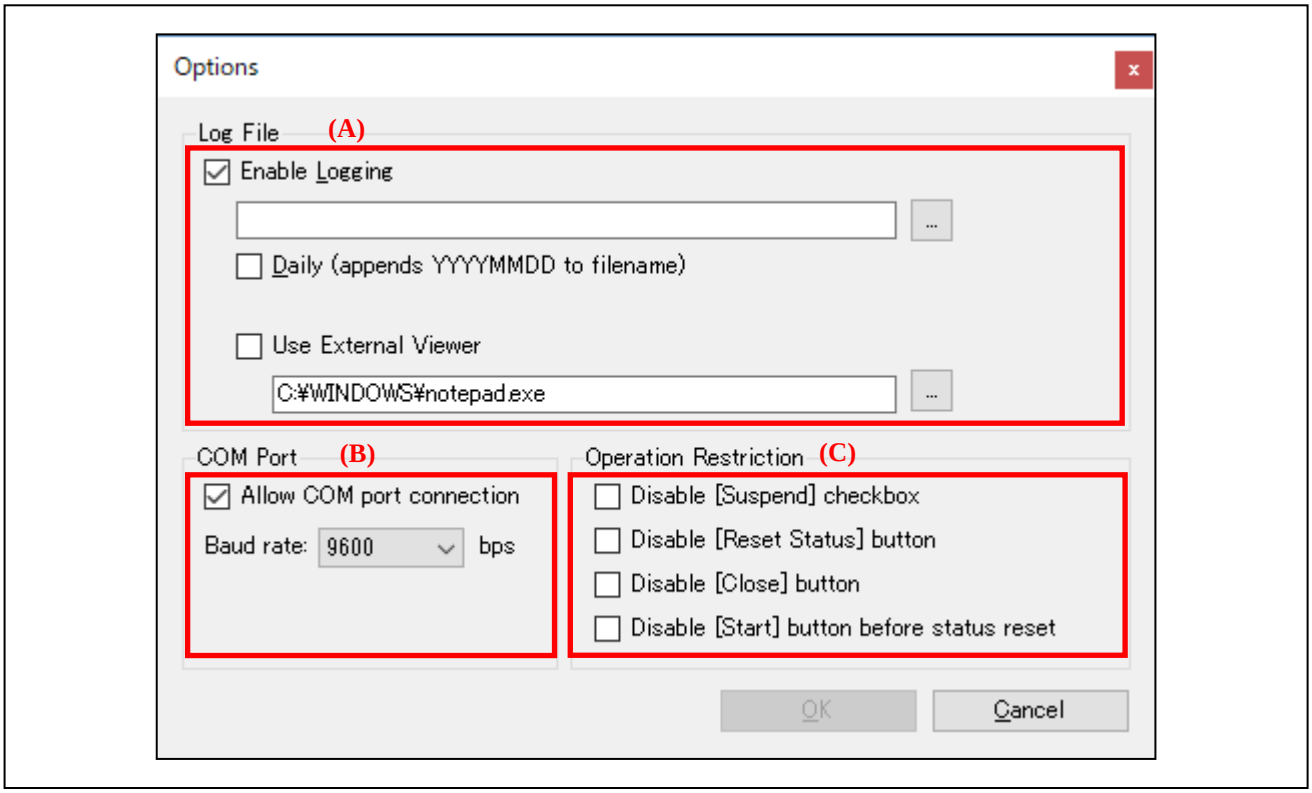

Figure 8 [Options] Dialog Box

3.5.1 (A) [Log File] group box

The following describes the items in the [Log File] group box.

Table 10 [Log File] Group Box

Item	Description
Enable Logging	Select whether a log of operations is to be saved.
Path to the log file	Specify the name of the log file.
Daily	Select whether log files are to be newly created by the day.
Use External Viewer	Select this check box if you wish to use an external viewer to display the log file.
Path for a file for executing an external viewer	Shows the path to the file for executing the external viewer.

3.5.2 (B) [COM Port] group box

The following describes the items in the [COM Port] group box.

Table 11 [COM Port] Group Box

Item	Description
Allow COM port connection	Select whether COM port connections for the FP6 units are allowed. When this check box is selected, FP6 units that are connected to COM ports rather than through the USB are also targets to be found.
Baud rate	Only available when COM port connection is enabled. Specify the bit rate for COM port connection. Select the bit rate to suit that of the connected FP6 units.

3.5.3 (C) [Operation Restriction] group box

The following describes the items in the [Operation Restriction] group box.

Table 12 [Operation Restriction] Group Box

Item	Description
Disable [Suspend] checkbox	Disables the [Suspend] check boxes in the main window.
Disable [Reset Status] button	Disables the [Reset Status] button in the main window.
Disable [Close] button	Disables the [Close] button in the upper right corner of the main window. However, the GFP can still be closed by selecting [Exit] from the [File] menu.
Disable [Start] button before state reset	Disables the [Start] button while the results of execution are being displayed. This forces the user to click on the [Reset Status] and [Start] buttons, in that order, to start operations again.

4. Messages

4.1 Error Messages

Tables 13 show error messages for the GFP.

Table 13 Error Messages for the GFP

Error No.	Message	Handling
E8000001	Not enough memory for this operation.	Processing cannot be continued since there is not enough memory in the host PC.
E0000004	The firmware file for the FP6 was not correct.	Reinstall the GFP.
E0000012	Preparation for downloading the program file failed.	Check whether the document folder already contains a file with the same name as that of the file selected in [Program file 1]. If there is such a file, move it from the folder or permit overwriting it.
E0000015	The format of the selected program file is not supported.	Select the files for programming again.
E0000016	Data overlapped.	This error message will appear when processing to write data to overlapping address ranges is attempted. Confirm that the files for programming do not include data for overlapping address ranges.
E0000017	The RPI, HCUHEX, and DDI formats cannot be selected for program file 2 to 4.	Select the file in the RPI, HCUHEX and DDI format as [Program File 1].
E8000101	A file was not found.	This error code and message are displayed when the specified file cannot be found. Check that the file exists.
E8000102	Cannot open the file.	This error code and message are displayed when the specified file cannot be opened. Check the file.
E8000103	Cannot save the file.	Permit writing to the file.
E8000104	Failed to write to the log file. Setting logging to “disabled”.	Open the [Options] dialog box and confirm that there is no problem with the directory where the log file is to be saved.
E8000202	Cannot connect to the programmer.	Confirm the connection with the FP6.
E8000204	An error occurred while communicating with the programmer.	Confirm the connection with the FP6.
E8000301	Failed to acquire programmer information.	Confirm the connection with the FP6.
E8000302	Failed to execute the programmer command.	Confirm the connection with the FP6.
E8000303	Failed to execute the self-test.	Confirm the following items. • If the target and remote connectors are connected to the MCU or device, disconnect them. • The FP6 may have a fault. Use the FP6 Terminal to execute a self-test.

Error No.	Message	Handling
E8000306	Failed to update the firmware.	Confirm the following items. • Is the FP6 actually connected? • The firmware file may be damaged. Reinstall the GFP. The COM port number that has been assigned on the host PC may have been changed so that reconnection failed when the FP6 was restarted after updating of the firmware. Check that the LCD panel of the FP6 is not indicating an error.
E8000308	Failed to download the files.	Confirm that the specified setting file and files for programming are correct.

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