RENESAS

CubeSuite Ver.1.40

Integrated Development Environment

User's Manual: Programming

Target Device
78K0 Microcontroller
78K0R Microcontroller
V850 Microcontroller

How to Use This Manual

This manual describes the role of the CubeSuite integrated development environment for developing applications and systems for 78K0 microcontrollers, 78K0R microcontrollers and V850 microcontrollers, and provides an outline of its features.

CubeSuite is an integrated development environment (IDE) for 78K0 microcontrollers, 78K0R microcontrollers and V850 microcontrollers, integrating the necessary tools for the development phase of software (e.g. design, implementation, and debugging) into a single platform.

By providing an integrated environment, it is possible to perform all development using just this product, without the need to use many different tools separately.

Readers This manual is intended for users who wish to understand the functions of the CubeSuite and design software and hardware application systems.

Purpose This manual is intended to give users an understanding of the functions of the Cubesuite to use for reference in developing the hardware or software of systems using these devices.

Organization This manual can be broadly divided into the following units.

> **CHAPTER 1 GENERAL**
> **CHAPTER 2 FUNCTIONS**
> **APPENDIX A WINDOW REFERENCE**
> **APPENDIX B INDEX**

How to Read This Manual It is assumed that the readers of this manual have general knowledge of electricity, logic circuits, and microcontrollers.

Conventions

Data significance:	Higher digits on the left and lower digits on the right
Active low representation:	$\overline{\text{XXX}}$ (overscore over pin or signal name)
Note:	Footnote for item marked with Note in the text
Caution:	Information requiring particular attention
Remark:	Supplementary information
Numeric representation:	Decimal … XXXX
	Hexadecimal … 0xXXXX

Related Documents   The related documents indicated in this publication may include preliminary versions. However, preliminary versions are not marked as such.

Document Name		Document No.
CubeSuite Integrated Development Environment User's Manual	Start	R20UT0256E
	Analysis	R20UT0265E
	Programming	This manual
	Message	R20UT0267E
	Coding for CX compiler	R20UT0259E
	Build for CX compiler	R20UT0261E
	78K0 Coding	R20UT0004E
	78K0 Build	R20UT0005E
	78K0 Debug	R20UT0262E
	78K0 Design	R20UT0006E
	78K0R Coding	U19382E
	78K0R Build	U19385E
	78K0R Debug	R20UT0263E
	78K0R Design	R20UT0007E
	V850 Coding	U19383E
	V850 Build	U19386E
	V850 Debug	R20UT0264E
	V850 Design	R20UT0257E

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

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TABLE OF CONTENTS

CubeSuite is an integrated development environment used to carry out tasks such as design, coding, build and debug for developing application systems for microcontrollers manufactured by Renesas Electronics.

This chapter gives an overview of the flash programming tool (QB-Programmer).

1.1 Overview

The flash programming tool is one of the components provided by CubeSuite. It provides a GUI to set information in the microcontroller's built-in Flash memory by executing such commands as blank check, erase, program, verify and read.

> **Remark** The emulator (MINICUBE2 or E1) is needed to execute commands from the flash programming tool. E1 can only be used when the target device is a V850.

1.2 Features

Below are the features of the flash programming tool.
- Supports microcontrollers with built-in single-power-supply flash memory
- Can communicate with microcontrollers via UART and CSI-H/S
- Can supply 3.3 or 5.0 V power (maximum rated current : 200 mA) to the microcontroller
- Can supply a power to the microcontroller
  When using MINICUBE2 :   3.1 V or 5.0 V (maximum rated current : 100 mA)
  When using E1 :   3.3 V or 5.0 V (maximum rated current : 200 mA)
- Can supply a 4, 8, or 16 MHz clock to the microcontroller

CHAPTER 2 FUNCTIONS

This chapter describes the key functions provided by the flash programming tool along with operation procedures.

2.1   Overview

The flash programming tool can execute such commands as blank check, erase, program, verify and read by selecting/ inputting in the CubeSuite panel the information necessary to manipulate the microcontroller's built-in Flash memory.

The following sections describe the operation procedures for the flash programming tool.

(1) Start CubeSuite
Launch CubeSuite from the [Start] menu of Windows.

Remark   See "CubeSuite Start User's Manual" for details on "Start CubeSuite".

(2) Create/Open project
Create a new project (that defines a kind of project, microcontroller to be used, build tools to be used, etc.) or load an existing project.

Remark   See "CubeSuite Start User's Manual" for details on "Create/Open project".

(3) Select Emulator
Selct the emulator (MINICUBE2 or E1) to use int the Project Tree panel.

(4) Open Property Panel
Open the Property panel for setting information necessary to manipulate Flash memory.

(5) Enter Information
Set information necessary to manipulate Flash memory in the Property panel.

(6) Establish Connection
Establish a connection between the flash programming tool and the emulator.

(7) Execute Flash Command
Execute Flash commands (e.g. blank check, erase, program, verify and read).

(8) End Connection
End the connection between the flash programming tool and the emulator.

(9) Save project
Save a project.

Remark   See "CubeSuite Start User's Manual" for details on "Save project".

2.2   Select Emulator

Selct the emulator (MINICUBE2 or E1) to use int the Project Tree panel.

To select the emulator, from the Project Tree panel select [QB-Programmer (Flash Programming Tool)], then from the context menu, select [Using Programming Tool].

Figure 2-1.   Select Emulator
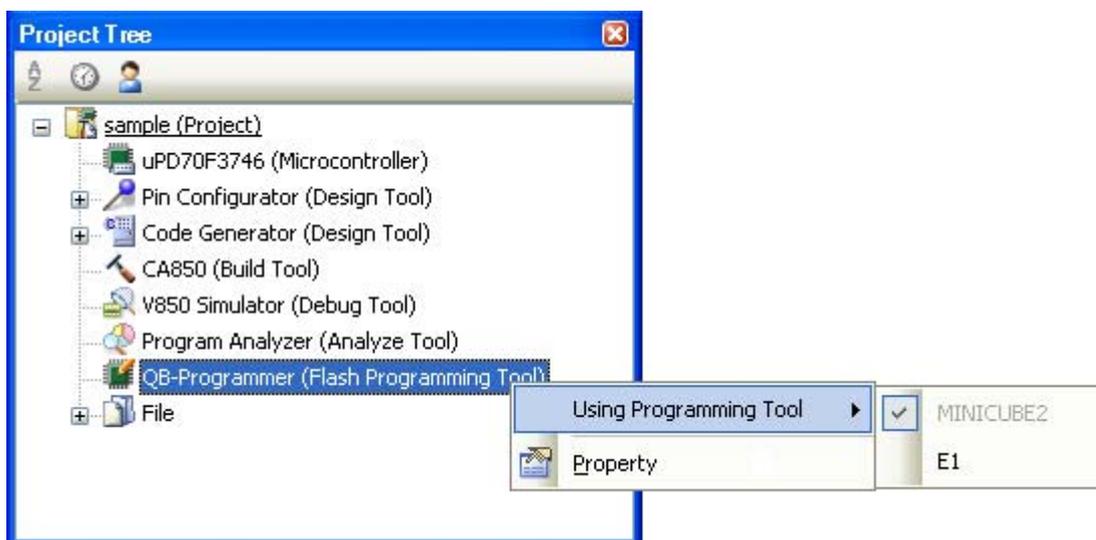
Remark   If the microcontroller defined for a project is not supported by the flash programming tool (e.g. a ROMless product), then the [QB-Programmer (Flash Programming Tool)] node will not appear under [*Project name* (Project)] in the Project Tree panel.

2.3   Open Property Panel

Open the Property panel for setting information necessary to manipulate Flash memory.

To open the Property panel, from the Project Tree panel select [QB-Programmer (Flash Programming Tool)], then from the context menu, select [Property].

Figure 2-2.   Open Property Panel
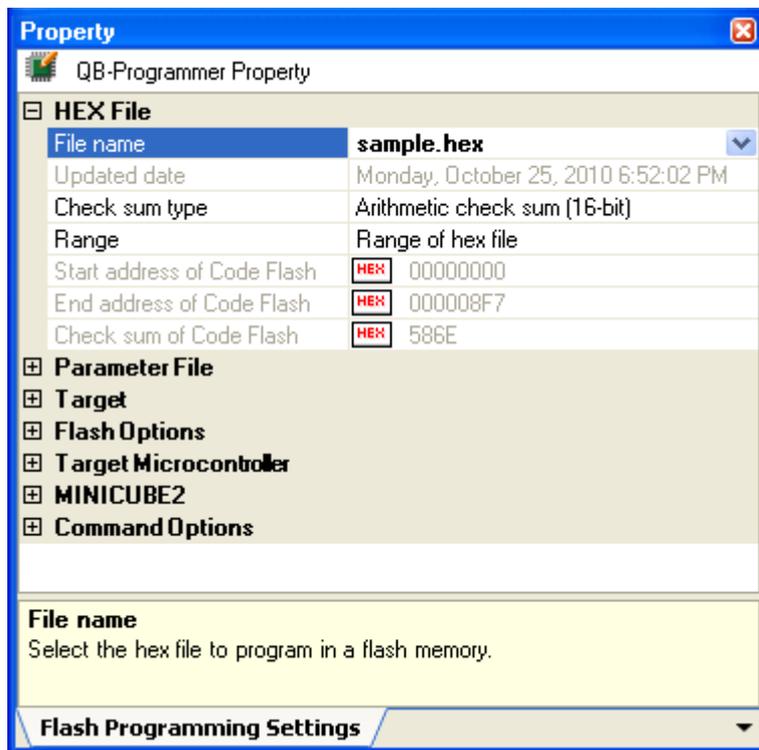
2.4   Enter Information

In the Property panel opened in "2.3   Open Property Panel", set the information necessary to manipulate Flash memory in the detail information display/change area.

Remarks 1.   The information in the [Target Microcontroller] category appears when the execution of a Flash command from "2.6   Execute Flash Command" completes.

2.   The information in the [MINICUBE2] category appears when a connection with the emulator from "2.5 Establish Connection" is established, and when the connection is ended as in "2.7   End Connection".

2.5   Establish Connection

Establish a connection between the flash programming tool and the emulator.

To establish the connection, from the menu bar, select [Flash] menu >> [Connect to Flash Programming Tool], or click the corresponding button on the toolbar (☐).

Remarks 1.   To execute Flash commands using the flash programming tool, you must establish a connection in order to exclusively control the emulator, which is shared by multiple components (e.g. the debugging tool).

2.   When a connection has been established to the emulator, the relevant information (firmware version) appears on the Property panel, under the [MINICUBE2] category.

2.6   Execute Flash Command

On the menu bar, from the [Flash] menu, select the relevant item ([Blank Check], [Erase], [Program], [Verify], [Read], [Security], [Check Sum], [Autoprocedure (E.P)], [Set Option Bytes], [Set OCD Security ID], [Signature Read], or [Get Flash Options]). Alternatively, click the relevant button on the toolbar (🖳 , 🔶 , 🖊 , 🔘 , 📇 , or 🔍). The Flash command is executed.

The results of executing the Flash command are output to the Output panel.

> **Remark**   Commands that are not supported by microcontrollers with built-in Flash command cannot be executed.

2.7   End Connection

End the connection between the flash programming tool and the emulator.

To end the connection, from the menu bar, select [Flash] menu >> [Disconnect from Flash Programming Tool], or click the corresponding button on the toolbar (🗙).

> **Remark**   When disconnected from the emulator, the information on the Property panel under the [Target Microcontroller] and [MINICUBE2] categories is cleared.

APPENDIX A   WINDOW REFERENCE

This appendix explains in detail the functions of the windows, panels and dialog boxes of the flash programming tool.

A.1   Description

The flash programming tool has the following windows, panels and dialog boxes.

Table A-1.   Window/Panel/Dialog Box List

Window/Panel/Dialog Box Name	Function
Main window	This is the first window to open when CubeSuite is launched. This window is used to operate various components (design tool, build tool, etc.) provided by CubeSuite.
Project Tree panel	This panel displays the components of the project (microcontroller, design tool, build tool, etc.) in a tree structure.
Property panel	This panel allows you to view the information and change the setting for the node selected in the Project Tree panel.
Output panel	This panel displays operation logs for various components (design tool, build tool, etc.) provided by CubeSuite.
Save As dialog box	This dialog box allows you to name and save a file (such as a report file).

Main window

This is the first window to open when CubeSuite is launched. This window is used to operate various components (design tool, build tool, etc.) provided by CubeSuite.

Figure A-1.   Main Window
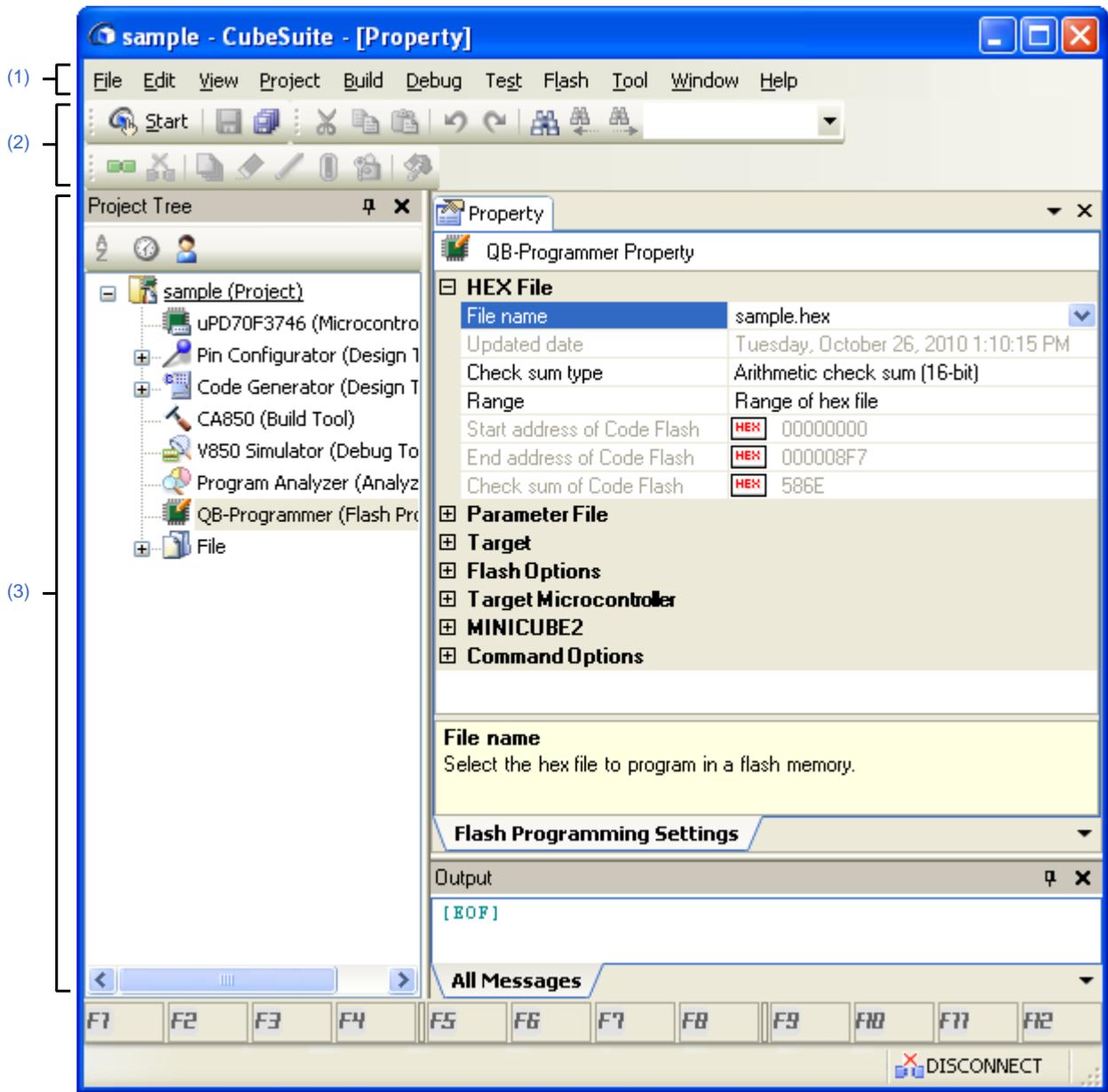
The following items are explained here.

- [How to open]
- [Description of each area]

[How to open]

- From the [start] menu, select [All Programs] >> [NEC Electronics CubeSuite] >>[CubeSuite].

[Description of each area]

(1) Menu bar

This area consists of the following menu items.

(a) [File] menu

Save Output-*Tab Name*	Output panel-dedicated item
	Save the message corresponding to the specified tab overwriting the existing file.
Save Output-*Tab Name* As...	Output panel-dedicated item
	Open the Save As dialog box for naming and saving the message corresponding to the specified tab.

(b) [Edit] menu

Undo	Property panel-dedicated item
	Cancel the effect of an edit operation to restore the previous state.
Cut	Property panel-dedicated item
	Send the character string or lines selected with range selection to the clipboard and deletes them.
Copy	Property panel/Output panel-dedicated item
	Send the character string or lines selected with range selection to the clipboard.
Paste	Property panel-dedicated item
	Insert the contents of the clipboard at the caret position.
Delete	Property panel-dedicated item
	Delete the character string or the lines selected with the range selection.
Select All	Property panel/Output panel-dedicated item
	Select all the strings displayed in the item being edited or all the strings displayed in the Message area.
Search...	Output panel-dedicated item
	Open the Search and Replace dialog box for searching strings with the [Quick Search] tab selected.
Replace...	Output panel-dedicated item
	Opens the Search and Replace dialog box for replacing strings with the [Whole Replace] tab selected.

(c) [Flash] menu

Connect to Flash Programming Tool	When the connection to the emulator is established, the [Flash Programming Settings] tab view is refreshed.
	Functions in the same manner as the button.
	The items in the [Flash Programming Settings] tab view are shown below.
	- [MINICUBE2] category
	Firmware version

Disconnect from Flash Programming Tool	When the connection to the emulator is ended, the [Flash Programming Settings] tab view is refreshed.
	Functions in the same manner as the ![button] button.
	
	The items in the [Flash Programming Settings] tab view are shown below.
	 - [Target Microcontroller] category
	   Target microcontroller name
	   Firmware version
	 - [MINICUBE2] category
	   Firmware version

Blank Check	Check whether the Flash memory is cleared (no data is written to it). Functions in the same manner as the ![button] button.
Erase	Erase the data written to the Flash memory. Functions in the same manner as the ![button] button.
Program	Write data (the file specified on the [Flash Programming Settings] tab, under the [HEX File] category >> [File name]) to Flash memory. Functions in the same manner as the ![button] button.
Verify	Compare the Flash memory with the file specified on the [Flash Programming Settings] tab, under the [HEX File] category >> [File name], and verify whether they match. Functions in the same manner as the ![button] button.
Read	Read the data written to Flash memory, and open a Save As dialog box to ask where to save that data.
Set Security	Set the security information (e.g. Disable Chip Erase, Disable Block Erase, or Disable Write), based on the information specified on the ［Flash Options］ category, under the [Flash Programming Settings] tab. Functions in the same manner as the ![button] button.
Check sum	Read the checksum value of the data written to Flash memory.
Autoprocedure (E.P.)	Erase any data written to the Flash memory, and then write the data in the file specified on the [Flash Programming Settings] tab, under [HEX File] category >> [File name]. Functions in the same manner as the ![button] button.
Set Option Bytes	Set the option byte based on the information specified on the [Flash Options] category, under the [Flash Programming Settings] tab.
Set OCD Security ID	Set the on-chip debug security ID based on the information specified on the [Flash Options] category, under the [Flash Programming Settings] tab.

Signature Read	Get the microcontroller's signature information, and refresh the [Flash Programming Settings] tab view.
	
	The items in the [Flash Programming Settings] tab view are shown below.
	 - [Target Microcontroller] category
	   Target Microcontroller name
	   Microcontroller firmware version

Get Flash options	Acquire the security settings (e.g. Disable Chip Erase, Disable Block Erase, and Disable Write), and open a Message dialog box asking whether to change the [Flash Programming Settings] tab settings.

Remark   The results of executing a command in the Flash memory are shown in the Output panel.

(d) [Help] menu

Open Help for [Project Tree] Panel	Project Tree panel-dedicated item
	Display the online help of Project Tree panel.
Open Help for [Property] Panel	Property panel-dedicated item
	Display the online help of Property panel.
Open Help for [Output] Panel	Output panel-dedicated item
	Display the online help of Output panel.

(2) Toolbar

This area consists of the following buttons.

	When the connection to the emulator is established, the [Flash Programming Settings] tab view is refreshed.
	Functions in the same manner as when [Connect to Flash Programming Tool] is selected from the [Flash] menu.
	The items in the [Flash Programming Settings] tab view are shown below.
	- [MINICUBE2] category Firmware version
	When the connection to the emulator is ended, the [Flash Programming Settings] tab view is refreshed.
	Functions in the same manner as when [Disconnect from Flash Programming Tool] is selected from the [Flash] menu.
	The items in the [Flash Programming Settings] tab view are shown below.

	- [Target Microcontroller] category
	  Target microcontroller name
	  Firmware version
	 - [MINICUBE2] category
	  Firmware version

	Check whether the Flash memory is cleared (no data is written to it).
	Functions in the same manner as when [Blank Check] is selected from the [Flash] menu.
	Erase the data written to the Flash memory
	Functions in the same manner as when [Erase] is selected from the [Flash] menu.
	Write data (the file specified on the [Flash Programming Settings] tab, under the [HEX File] category >> [File name]) to Flash memory.
	Functions in the same manner as when [Program] is selected from the [Flash] menu.
	Compare the Flash memory with the file specified on the [Flash Programming Settings] tab, under the [HEX File] category >> [File name], and verify whether they match.
	Functions in the same manner as when [Verify] is selected from the [Flash] menu.
	Set the security information (e.g. Disable Chip Erase, Disable Block Erase, or Disable Write), based on the information specified on the [Flash Programming Settings] tab, under the ［Flash Options］category.
	Functions in the same manner as when [Set Security] is selected from the [Flash] menu.

	Erase any data written to the Flash memory, and then write the data in the file specified on the [Flash Programming Settings] tab, under [HEX File] category >> [File name].
	Functions in the same manner as when [Autoprocedure (E.P)] is selected from the [Flash] menu.

Remark   The results of executing the Flash command are shown in the Output panel.

(3) Panel display area

This area consists of multiple panels, each dedicated to a different purpose.

See the following sections for details on this area.

- Project Tree panel
- Property panel
- Output panel

Project Tree panel

This panel displays components of the project (microcontroller, design tool, build tool, etc.) in a tree structure.

Figure A-2. Project Tree Panel
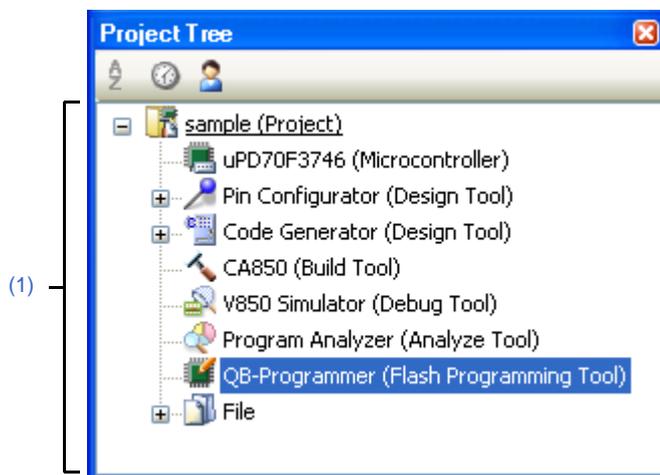
The following items are explained here.
- [How to open]
- [Description of each area]
- [[Help] menu (Project Tree panel-dedicated items)]
- [Context menu]

[How to open]

- From the [View] menu, select [Project Tree].

[Description of each area]

(1) Project tree area
This area displays components of the project (microcontroller, design tool, build tool, etc.) in a tree structure.

QB-Programmer (Flash Programming Tool)	This is the flash programming tool to use.

[[Help] menu (Project Tree panel-dedicated items)]

Open Help for [Project Tree] Panel	Display the online help of this panel.

[Context menu]

The following context menu items are displayed by right clicking the mouse.

Using Programming Tool	The following cascade menus are displayed to select the emulator to use.	
	MINICUBE2	Use MINICUBE2 as the emulator.
	E1	Use E1 as the emulator.

Property	Open the Property panel containing the information for the selected node ([QB-Programmer (Flash Programming Tool)]).

Remark   [E1] is only displayed when the target device is a V850.

Property panel

This panel allows you to view the information on and change the setting for the node selected in the Project Tree panel.

Figure A-3.   Property Panel (Selected [QB-Programmer (Flash Programming Tool)])
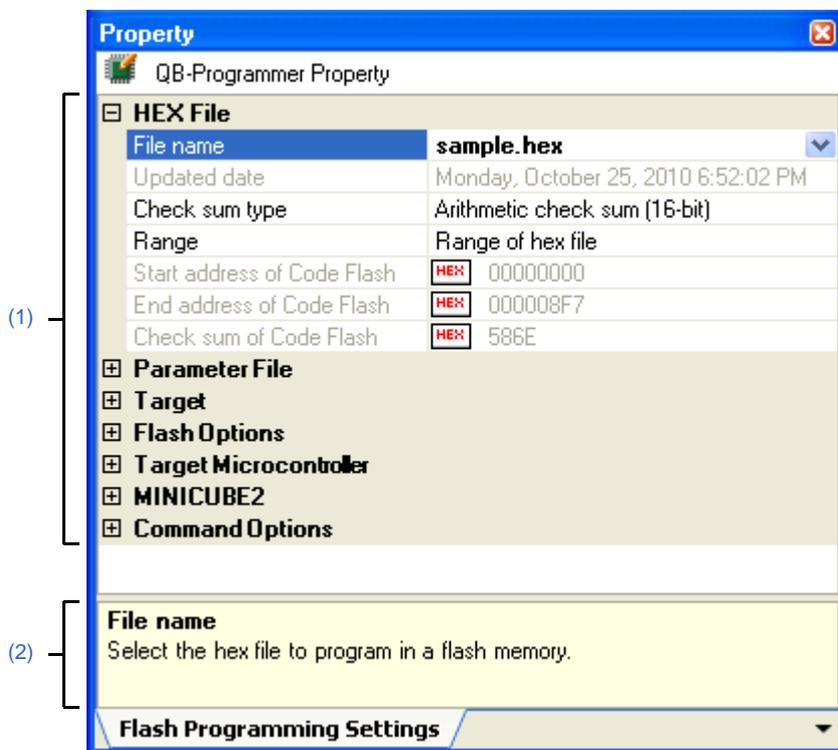
The following items are explained here.

- [How to open]
- [Description of each area]
- [[Edit] menu (Property panel-dedicated items)]
- [[Help] menu (Property panel-dedicated items)]
- [Context menu]

[How to open]

- On the Project Tree panel, select a node ([QB-Programmer (Flash Programming Tool)]), and then select [Property] from the [View] menu.
- On the Project Tree panel, select a node ([QB-Programmer (Flash Programming Tool)]), and then select [Property] from the context menu.

Remark   If this panel is already open, selecting a different node ([QB-Programmer (Flash Programming Tool)]) in the Project Tree panel changes the content displayed in the Detail information display/change area and Explanation area accordingly.

[Description of each area]

(1) **Detail information display/change area**

This area allows you to view the information on and change the setting for the node selected in the Project Tree panel.

The content displayed in this area differs depending on the node selected in the Project Tree panel.

The following table shows the meaning of ⊞ and ⊟ displayed to the left of each category.

⊞	Indicate that the items within the category are displayed as a "collapsed view".
⊟	Indicate that the items within the category are displayed as an "expanded view".

Remarks 1. See the sections "[Flash Programming Settings] tab" for details on the content displayed in this area.

2. To switch between ⊞ and ⊟ , click this mark or double-click the category name.

(2) **Explanation area**

This area displays a "brief description" of the category or item selected in the Detail information display/change area.

[[Edit] menu (Property panel-dedicated items)]

Undo	Cancel the effect of an edit operation to restore the previous state.
Cut	Send the character string or lines selected with range selection to the clipboard and deletes them.
Copy	Send the character string or lines selected with range selection to the clipboard.
Paste	Insert the contents of the clipboard at the caret position.
Delete	Delete the character string or the lines selected with the range selection.
Select All	Select all strings displayed in the item being edited.

[[Help] menu (Property panel-dedicated items)]

Open Help for [Property] Panel	Display the online help of this panel.

[Context menu]

The following context menu items are displayed by right clicking the mouse.

(1) **While the item is being edited**

Undo	Cancel the effect of an edit operation to restore the previous state.
Cut	Send the character string or lines selected with range selection to the clipboard and deletes them.
Copy	Send the character string or lines selected with range selection to the clipboard.
Paste	Insert the contents of the clipboard at the caret position.
Delete	Delete the character string or the lines selected with the range selection.

Select All	Select all strings displayed in the item being edited.

(2) While the item is not being edited

Property Reset to Default	Restore the selected item to its default state.
Property Reset All to Default	Restore all items to their default state.

[Flash Programming Settings] tab

Display the information for the [QB-Programmer (Flash Programming Tool)] selected in the Project Tree panel (HEX File, Parameter File, Target, etc.) and change the settings.

Figure A-4.　[Flash Programming Settings] Tab

The following items are explained here.
- [How to open]
- [Description of each area]

[How to open]

- On the Project Tree panel, select [*Project name* (Project)] >> [QB-Programmer (Flash Programming Tool)], and then select [Property] from the [View] menu.
- On the Project Tree panel, select [*Project name* (Project)] >> [QB-Programmer (Flash Programming Tool)], and then select [Property] from the context menu.

Remark   If this panel is already open, selecting a different [QB-Programmer (Flash Programming Tool)] in the Project Tree panel changes the content displayed accordingly.

[Description of each area]

(1) [HEX File] category

Display or select the information for the hex file specified for the project (File name, Updated date, and Check sum type).

File name	Select the hex file.	
	Note that only files register with the project (with extensions .hex, .rex, .hbx, or .hfx) can be selected.	
Updated date	Display the last modified data for the hex file selected under [File name].	
Check sum type	Select the check sum calculation method for the hex file selected under [File name].	
	Arithmetic check sum (16-bit)	Calculate the check sum using 16-bit subtraction.
	CRC sum (32-bit)	Calculate the check sum using 32-bit CRC.
Range	Select the area from which to calculate the check sum.	
	Range of hex file	Target the area assigned to the hex file selected under [File name] for calculating the check sum.
	Range of target microcontroller	Calculate the check sum for all Flash memory area built into the microcontroller specified for the project.
	User optional range (Code Flash)	Calculate the check sum for an area from [Start address of Code Flash] to [End address of Code Flash].
	User optional range (Data Flash)	Calculate the check sum for an area from [Start address of Data Flash] to [End address of Data Flash].
	User optional range (Code Flash + Data Flash)	The checksum is calculated for the area specified by the [Start address of Code Flash]/[End address of Code Flash], and the area specified by the [Start address of Data Flash]/[End address of Data Flash].
Start address of Code Flash	Enter the start address of the Code Flash memory for which to calculate the check-sum.	
End address of Code Flash	Enter the end address of the Code Flash memory for which to calculate the check-sum.	

Check sum of Code Flash	This shows the results of calculation (check sum) using the method selected for [Check sum type].
Start address of Data Flash	Enter the start address of the Data Flash memory for which to calculate the checksum.
End address of Data Flash	Enter the end address of the Data Flash memory for which to calculate the checksum.
Check sum of Data Flash	This shows the results of calculation (check sum) using the method selected for [Check sum type].

Remarks 1. The [Updated] view is refreshed when a [File name] is selected.
      2. The [Check sum of Code Flash] and [Check sum of Data Flash] views are refreshed when a [Check sum type] is selected.
      3. If "Range of hex file" or "Range of target microcontroller" is selected under [Range], then the corresponding addresses are set automatically in [Start address of Code Flash]/[End address of Code Flash], and [Start address of Data Flash]/[End address of Data Flash], and input is disabled.
      4. When the check sum is calculated, areas to which data is not written are filled in with "0xff".
      5. This item may not be shown for all microcontroller types.

(2) [Parameter File] category

Display or select the information for a parameter file (File name, and File Version) corresponding to the microcontroller specified for the project.

File name	Select the parameter file.
File version	Display the version of the parameter file.

Remarks 1. [File name] displays a list of parameter files corresponding to the microcontroller specified for the project, including the folder path.
      2. [After the selection of the parameter file is complete, the [File name] view switches from full path (including folder path) to filename only.
      3. The [File version] view is refreshed when a [File name] is selected.

(3) [Target] category

Display or select the interface (e.g. Communication port, Communication transfer rate, and Supply oscillator) between the emulator and the microcontroller.

Communication port	This shows the communication method (UART or CSI-H/S).	
Communication transfer rate	Select the speed of communication.	
Supply oscillator	Select the type of source to supply the clock to the microcontroller.	
	Target	Supply the clock from the target system.
	Programmer	Supply the clock from the emulator.
Frequency [MHz]	Select the clock frequency to supply to the microcontroller.	
Multiply rate	Select the division/multiplication rate of the clock to supply to the microcontroller.	
Supply power	Select the supply voltage to supply to the microcontroller.	
	Target	Supply the supply voltage from the target system.
	3.3 V	Supply the supply voltage of 3.3 V from the emulator.
	5.0 V	Supply the supply voltage of 5.0 V from the emulator.

Operation mode	Select the unit of access for Flash memory.	
	Chip	Access Flash memory at the chip level.
	Block (Code Flash)	Access Code Flash memory at the block level.
	Block (Data Flash)	Access Data Flash memory at the block level.
	Block (Code Flash + Data Flash)	Access Flash memory at the block level.
Start block number of Code Flash	Select the starting block when accessing Code Flash memory at the block level.	
End block number of Code Flash	Select the ending block when accessing Code Flash memory at the block level.	
Start block number of Data Flash	Select the starting block when accessing Data Flash memory at the block level.	
End block number of Data Flash	Select the ending block when accessing Data Flash memory at the block level.	

Remarks 1.   [Supply power] is restricted when the "E1" emulator is being used, and it becomes effective.

        2.   [Start block number of Code Flash] and [End block number of Code Flash] are only displayed if "Block (Code Flash)" or "Block (Code Flash + Data Flash)" is selected under [Operation mode].

        3.   [Start block number of Data Flash] and [End block number of Data Flash] are only displayed if "Block (Data Flash)" or "Block (Code Flash + Data Flash)" is selected under [Operation mode].

(4) [Flash Options] category

Display or select the commands to block for Flash memory (e.g. Disable Chip Erase, Disable Block Erase, or Disable Program) and the microcontroller information (End of boot block number, Reset vector address, Start of flash shield block number, etc.).

Disable Chip Erase	Disable execution of chip erase commands for the Flash memory.	
	Valid	Disable execution of the chip erase command.
	Invalid	Enable execution of the chip erase command.
Disable Block Erase	Disable execution of block erase commands for the Flash memory.	
	Valid	Disable execution of the block erase command.
	Invalid	Enable execution of the block erase command.
Disable Program	Disable execution of write commands for the Flash memory.	
	Valid	Disable execution of the write command.
	Invalid	Enable execution of the write command.
Disable Read	Disable execution of read commands for the Flash memory.	
	Valid	Disable execution of the read command.
	Invalid	Enable execution of the read command.
Disable boot block cluster reprogramming	Disable writing to the boot area.	
	Valid	Disable writing to the boot area.
	Invalid	Enable writing to the boot area.
Disable flsh shield window reprogamming	Select the update control of the Flash shield window.	
	Valid	Disable updates of the Flash shield window.
	Invalid	Enable updates of the Flash shield window.
End of boot block number	This shows the end of the boot area.	
Reset vector address	This shows the reset vector address of the microcontroller.	

Start of flash shield block number	Select the starting block of the Flash shield window.
End of flash shield block number	Select the ending block of the Flash shield window.
OCD Security ID	Enter the on-chip debug security ID.
OPBT*n*	Select the option bytes.

Remark   This item may not be shown for all microcontroller types.

(5) [Target Microcontroller] category

Display information about the microcontroller (Target microcontroller name, and Microcontroller firmware version).

Target microcontroller name	Display the name of the microcontroller.
Firmware version	Display the firmware version of the microcontroller.

Remark   The [Target microcontroller name] and [Microcontroller firmware version] views are refreshed when a command completes execution on the Flash memory.

(6) [MINICUBE2] category

Display information about the emulator (Firmware version).

Firmware version	Display the firmware version of the emulator.

Remark   The [Firmware version] view is refreshed in the following circumstances: when the [Flash] menu >> [Connect to Flash Programming Tool] is selected, and a connection is established with the emulator; and when the [Flash] menu >> [Disconnect from Flash Programming Tool] is selected, and the connection to the emulator is ended.

(7) [Command Options] category

Select the execution options for commands on Flash memory (e.g. Blank Check before Erase, Verify after Program, and Security after Program).

| Blank Check before Erase	Select whether to verify the status of Flash memory (whether data has been written) before erasing data written to Flash memory.	
	Valid	Erase data after verifying the status of the Flash memory.
	Invalid	Erase data without verifying the status of the Flash memory.
Verify after Program	Select whether to verify after writing to Flash memory is complete that the data written to the Flash memory matches the data in the file specified, in the [Hex File] category >> [File name].	
	Valid	Verify that they match after writing is complete.
	Invalid	Do not verify that they match after writing is complete.

Security after Program	Select whether to configure the security information set, in the [Flash Options] category (e.g. Blank Check before Erase, Verify after Program, and Security after Program) after the writing of data to Flash memory is complete.	
	Valid	Configure the security settings after writing is complete.
	Invalid	Do not configure the security settings after writing is complete.
Check sum after Program	Select whether to read the check sum of the data written to Flash memory after writing is complete.	
	Valid	Read the check sum after writing completes.
	Invalid	Do not read the check sum after writing completes.
Set Option Bytes after Program	Select whether to set the option byte set in the [Flash Options] category after writing to Flash memory is complete.	
	Valid	Configure the option byte after writing is complete.
	Invalid	Do not configure the option byte after writing is complete.
Set OCD Security ID after Program	Select whether to set the on-chip debug security ID set in the [Flash Options] category after writing to Flash memory is complete.	
	Valid	Set the on-chip debug security ID after writing is complete.
	Invalid	Do not set the on-chip debug security ID after writing is complete.
Option for RESET signal	Select the status to set the RESET pin to after the execution of a command on Flash memory completes.	
	Hi-z	After the execution of a command on Flash memory completes, set the status of the RESET pin to high impedance.
	Low level	After the execution of a command on Flash memory completes, set the status of the RESET pin to low level.
Wide voltage mode	Select whether to write in wide voltage mode.	
	Valid	Write in wide voltage mode.
	Invalid	Do not write in wide voltage mode.

Remarks 1. The results of executing the command in accordance with the specified options are shown in the Output panel.

2. This item may not be shown for all microcontroller types.

Output panel

This panel displays operation logs for various components (design tool, build tool, etc.) provided by CubeSuite.

Figure A-5.   Output Panel
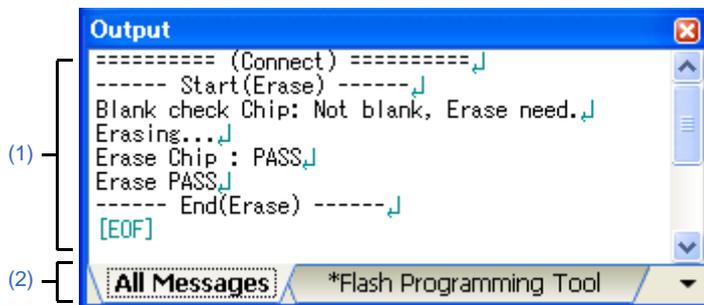
The following items are explained here.

- [How to open]
- [Description of each area]
- [[File] menu (Output panel-dedicated items)]
- [[Edit] menu (Output panel-dedicated items)]
- [[Help] menu (Output panel-dedicated items)]
- [Context menu]

[How to open]

- From the [View] menu, select [Output].

[Description of each area]

(1) Message area

This area displays operation logs for various components (design tool, build tool, etc.) provided by CubeSuite.

The following table shows the meaning of the color of the message text displayed in this area.

Table A-2.   Color of Message Text/Background

Message Text/Background	Description
Block/White	Information message Displayed with information notices.
Blue/Standard color	Warning message Displayed with warnings about operations.
Red/LightGray	Fatal error message Displayed when there is a fatal error, or when execution is not possible due to a operational mistake.

Remarks 1. See the sections "[All Output Messages] tab" and "[Flash Programming Settings] tab" for details on the content displayed in this area.

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    2.   If you press the [F1] key while the caret is positioned on a line in the alert message or error message, or if you select "Open Help for Message" from the context menu, the online help corresponding to the message opens.

(2) Tab selection area

Select the source of message.

    Remark   When the new message is output, "*" mark is displayed to the left of the tab name.

[[File] menu (Output panel-dedicated items)]

Save Output-*Tab Name*	Save the message corresponding to the specified tab overwriting the existing file.
Save Output-*Tab Name* As...	Open the Save As dialog box for naming and saving the message corresponding to the specified tab.

[[Edit] menu (Output panel-dedicated items)]

Copy	Send the character string or lines selected with range selection to the clipboard.
Select All	Select all the messages displayed on the Message area.
Search...	Opens the Search and Replace dialog box for searching strings with the [Quick Search] tab selected.
Replace...	Opens the Search and Replace dialog box for replacing strings with the [Whole Replace] tab selected.

[[Help] menu (Output panel-dedicated items)]

| Open Help for [Output] Panel	Display the online help of this panel.

[Context menu]

The following context menu items are displayed by right clicking the mouse.

Copy	Send the character string or lines selected with range selection to the clipboard.
Select All	Select all the messages displayed on the Message area.
Clear	Delete all the messages displayed on the Message area.
Stop Searching	Cancel the search currently being executed. This is invalid when a search is not being executed.
Open Help for Message	Display online help for the message on the current caret location. This only applies to warning messages and error messages.

[All Output Messages] tab

This tab displays operation logs for all components (design tool, build tool, etc.) provided by CubeSuite.

Figure A-6.   [All Output Messages] Tab
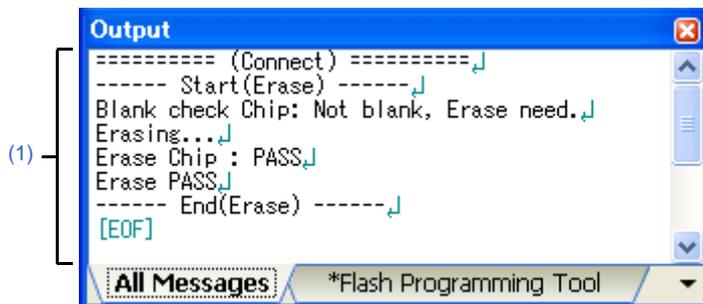
The following items are explained here.
- [How to open]
- [Description of each area]

[How to open]

- From the [View] menu, select [Output].

[Description of each area]

(1) Message area
This area displays operation logs for all components (design tool, build tool, etc.) provided by CubeSuite.
The following table shows the meaning of the color of the message text displayed in this area.

**Table A-3.   Color of Message Text/Background**

Message Text/Background	Description
Black/White	Information message Displayed with information notices.
Blue/Standard Color	Warning message Displayed with warnings about operations.
Red/LightGray	Fatal error message Displayed when there is a fatal error, or when execution is not possible due to a operational mistake.

Remark   If you press the [F1] key while the caret is positioned on a line in the alert message or error message, or if you select "Open Help for Message" from the context menu, the online help corresponding to the message opens.

[Flash Programming Tool] tab

This tab displays only operation logs for the flash programming tool out of those for various components (design tool, build tool, etc.) provided by CubeSuite.

Figure A-7.   [Flash Programming Tool] Tab
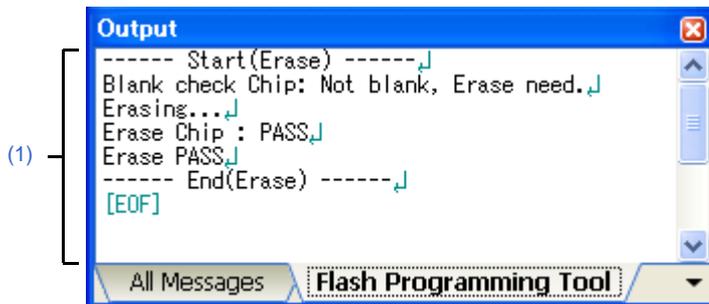
The following items are explained here.

- [How to open]
- [Description of each area]

[How to open]

- From the [View] menu, select [Output].

[Description of each area]

(1) Message area

This area displays only operation logs for the flash programming tool out of those for various components (design tool, build tool, etc.) provided by CubeSuite.

The following table shows the meaning of the color of the message text displayed in this area.

Table A-4.   Color of Message Text/Background

Message Text/Background	Outline
Black/White	Information message Displayed with information notices.
Blue/Standard Color	Warning message Displayed with warnings about operations.
Red/LightGray	Fatal error message Displayed when there is a fatal error, or when execution is not possible due to a operational mistake.

Remark   If you press the [F1] key while the caret is positioned on a line in the alert message or error message, or if you select "Open Help for Message" from the context menu, the online help corresponding to the message opens.

Save As dialog box

This dialog box allows you to name and save a file (such as a report file).

Figure A-8.   Save As Dialog Box
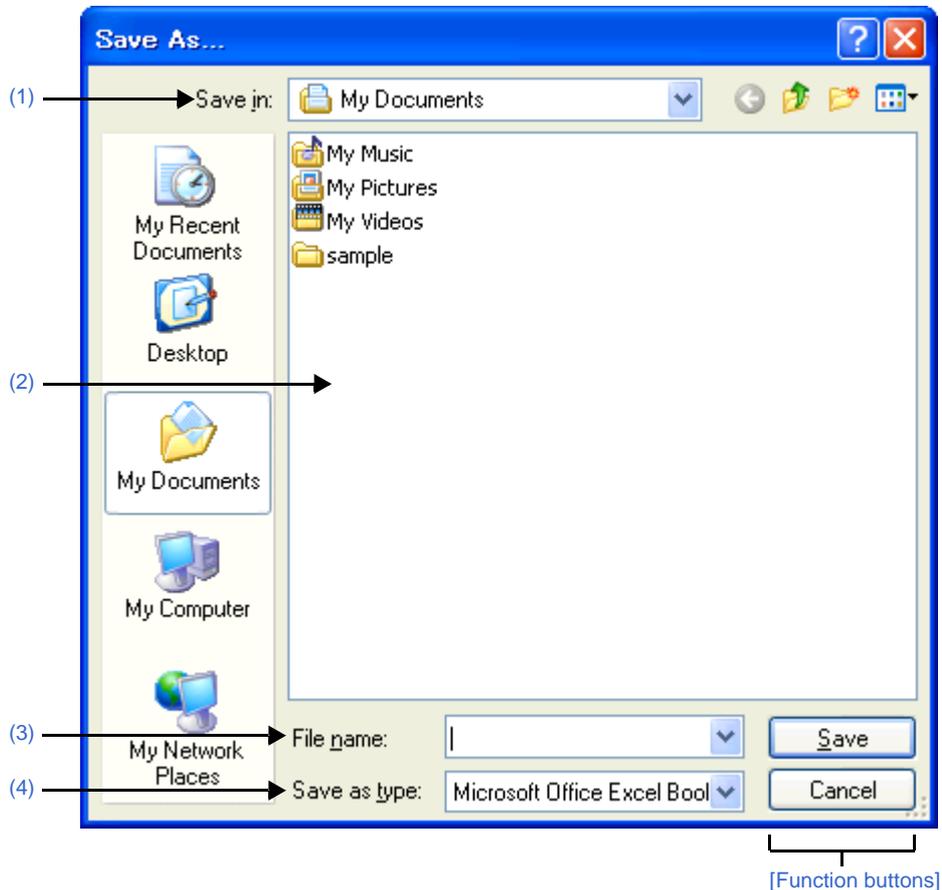
The following items are explained here.
- [How to open]
- [Description of each area]
- [Function buttons]

[How to open]

- From the [File] menu, select [Save <object> As...].

[Description of each area]

(1) [Save in]

Select the folder to which the files (report files, etc.) are output.

(2) List of files

This area displays a list of files matching the conditions selected in [Save in] and [Save as type].

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(3) [File name]

Specify the name of the file to be output.

(4) [Save as type]

Select the type of file to be output.

Microsoft Office Excel Book (*.xls)	Microsft Office Excel Bookformat
Bitmap (*.bmp)	Bitmap format

[Function buttons]

Button	Function
Save	Outputs a file having the name specified in the [File name] and [Save as type] to the folder specified in the [Save in].
Cancel	Ignores the setting and closes this dialog box.

APPENDIX B   INDEX

Revision Record

Rev.	Date	Description	
		Page	**Summary**
1.00	Oct 01, 2010	**-**	First Edition issued

RENESAS

CubeSuite Ver.1.40