

[Notes]

R20TS0330EJ0100

Rev.1.00

Renesas Flash Programmer

Jul. 16, 2018

Outline

When using the Renesas Flash Programmer, a software tool for programing flash memory, take note of the following points.

1. Lock bit settings for RX64M and RX71M groups
2. Lock bit settings for RX family excluding RX64M and RX71M groups

1. Lock Bit Settings for RX64M and RX71M Groups**1.1 Applicable Products**

Renesas Flash Programmer (RFP hereafter)

V3.00.00, V3.01.00, V3.02.00, V3.02.01, V3.03.00, V3.03.01, and V3.04.00

1.2 Applicable MCUs

RX64M and RX71M groups

1.3 Details

The two problems described below might occur when lock bits are set by selecting blocks in the [Lockbit] column on the [Block Setting] tab. If these problems occur, unintended processing is performed during erasing or programming of user areas by self-programming.

- Writing Lock Bits in Wrong Blocks
- Generating an Incorrect RPI File

The above two problems occur under the same conditions. Refer to the following for details of the problems and conditions.

1.3.1 Writing Lock Bits in Wrong Blocks

If all the following lock bit setting conditions are met and lock bits are written by the flash option programming command, lock bits are also written in unselected blocks in condition 3. RFP does not indicate an error.

Condition 1: Two or more consecutive blocks are selected.

Condition 2: One or more blocks whose block number is smaller than those in condition 1 are selected.

Condition 3: One or more blocks are not selected between a block selected in condition 1 and a block selected in condition 2.

- Example case: When only Block0, Block2, and Block3 are selected for lock bit setting

A lock bit is also written in Block1 not selected in the Lockbit column.

Region	Start	End	Size	Erase	P.V	Lockbit
RX71M Group				<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Code Flash 1	0xFFC00000	0xFFFFFFFF	4.0 M	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Block0	0xFFFE000	0xFFFFFFFF	8 K	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Block1	0xFFFC000	0xFFFDFFF	8 K	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Block2	0xFFFA000	0xFFFBFFF	8 K	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Block3	0xFF8000	0xFF9FFF	8 K	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Block4	0xFF6000	0xFF7FFF	8 K	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Block5	0xFF4000	0xFF5FFF	8 K	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Block6	0xFF2000	0xFF3FFF	8 K	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Block7	0xFF0000	0xFF1FFF	8 K	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Block8	0xFFE8000	0xFFEFFF	32 K	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Block9	0xFFE0000	0xFFE7FFF	32 K	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Block10	0xFFD8000	0xFFDFFF	32 K	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Block11	0xFFD0000	0xFFD7FFF	32 K	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

1.3.2 Generating an Incorrect RPI File

If all the conditions 1 to 3 in section 1.3.1 are met, the unselected block in condition 3 is also saved in the RPI file as a block subject to lock bit setting.

- Example case: When only Block0, Block2, and Block3 are selected for lock bit setting ^(Note)

Block1 not selected in the Lockbit column is also output and saved in the RPI file as a block subject to lock bit setting.

Note: Because this example is the same as the one in section 1.3.1, see section 1.3.1 for the example of the RFP setting window.

2. Lock Bit Settings for RX Family Excluding RX64M and RX71M Groups

2.1 Applicable Products

Renesas Flash Programmer (RFP hereafter)
 V3.00.00, V3.01.00, V3.02.00, V3.02.01, V3.03.00, V3.03.01, and V3.04.00

2.2 Applicable MCUs

RX210, RX21A, RX220, RX610, RX621, RX62G, RX62N, RX62T, RX630, RX631, RX634, RX63N, and RX63T groups

2.3 Details

When lock bits are set by selecting blocks in the [Lockbit] column on the [Block Setting] tab, the three problems below might occur. If these problems occur, unintended processing is performed during erasing or programming of user areas by self-programming.

- Writing Lock Bits in Wrong Blocks
- Lock Bit Write Error
- Generating an Incorrect RPI File

Refer to the following for details of the problems and conditions.

2.3.1 Writing Lock Bits in Wrong Blocks

If all the following lock bit setting conditions are met and lock bits are written by the flash option programming command, lock bits are also written in an unselected block in condition 3. RFP does not indicate an error.

Condition 1: Two or more consecutive blocks are selected.

Condition 2: One or more blocks whose block number is smaller than those in condition 1 are selected.

Condition 3: One or more blocks are not selected between a block selected in condition 1 and a block selected in condition 2.

Condition 4: Only one block whose block number is larger than those in condition 1 is selected.

Condition 5: One or more blocks are not selected between a block selected in condition 1 and a block selected in condition 4.

- Example case: When only Block0, Block2, Block3, and Block5 are selected for lock bit setting

A lock bit is also written in Block1 that is not selected in the Lockbit column.

Region	Start	End	Size	Erase	P.V	Lockbit
RX600 Series						
Code Flash 1	0xFFFC0000	0xFFFFFFFF	256 K	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Block0	0xFFFF0000	0xFFFFFFFF	4 K	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Block1	0xFFFFE000	0xFFFFEFFF	4 K	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Block2	0xFFFFD000	0xFFFFDFFF	4 K	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Block3	0xFFFC0000	0xFFFCFFF	4 K	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Block4	0xFFFFB000	0xFFFFBFFF	4 K	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Block5	0xFFFA0000	0xFFFAFFF	4 K	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Block6	0xFFFF9000	0xFFFF9FFF	4 K	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Block7	0xFFFF8000	0xFFFF8FFF	4 K	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Block8	0xFFFF4000	0xFFFF7FFF	16 K	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Block9	0xFFFF0000	0xFFFF3FFF	16 K	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Block10	0xFFFE0000	0xFFFEFFF	16 K	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Block11	0xFFFB0000	0xFFFBFFF	16 K	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Condition 2 is met. (points to Block0)

Condition 3 is met. (points to Block1)

Condition 1 is met. (points to Block2 and Block3)

Condition 5 is met. (points to Block4)

Condition 4 is met. (points to Block5)

2.3.2 Lock Bit Write Error

If all the following lock bit setting conditions are met and lock bits are written by the flash option programming command, RFP displays the following error message, and then stops flash operation.

Error (E1000011): A write error occurred in the device. (Response 77:53)

Condition 1: Two or more consecutive blocks are selected.

Condition 2: One or more blocks whose block number is smaller than those in condition 1 are selected.

Condition 3: One or more blocks are not selected between a block selected in condition 1 and a block selected in condition 2.

Condition 4: A block whose block number is larger than those in condition 1 is not selected.

- Example case: When only Block0, Block2, and Block3 are selected for lock bit setting

The error message indicated above is displayed, and then RFP flash operation stops.

Region	Start	End	Size	Erase	P.V	Lockbit
Code Flash 1	0xFFFC0000	0xFFFFFFFF	256 K	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Block0	0xFFFF0000	0xFFFFFFFF	4 K	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Block1	0xFFFE0000	0xFFFEFFFF	4 K	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Block2	0xFFFD0000	0xFFFDFFFF	4 K	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Block3	0xFFFC0000	0xFFFCFFFF	4 K	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Block4	0xFFFB0000	0xFFFBFFFF	4 K	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Block5	0xFFFA0000	0xFFFAFFFF	4 K	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Block6	0xFFFF9000	0xFFFF9FFF	4 K	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Block7	0xFFFF8000	0xFFFF8FFF	4 K	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Block8	0xFFFF4000	0xFFFF7FFF	16 K	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Block9	0xFFFF0000	0xFFFF3FFF	16 K	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Block10	0xFFFE0000	0xFFFEFFFF	16 K	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Block11	0xFFE00000	0xFFE0FFFF	16 K	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

2.3.3 Generating an Incorrect RPI File

If all the following lock bit setting conditions are met, the unselected block in condition 3 is also saved in the RPI file as a block subject to lock bit setting.

Condition 1: Two or more consecutive blocks are selected.

Condition 2: One or more blocks whose block number is smaller than those in condition 1 are selected.

Condition 3: One or more blocks are not selected between a block selected in condition 1 and a block selected in condition 2.

- Example case: When only Block0, Block2, and Block3 are selected for lock bit setting

Block1 not selected in the Lockbit column is also output and saved in the RPI file as a block subject to lock bit setting.

Region	Start	End	Size	Erase	P.V	Lockbit
Code Flash 1	0xFFFC0000	0xFFFFFFFF	256 K	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Block0	0xFFFF0000	0xFFFFFFFF	4 K	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Block1	0xFFFE0000	0xFFFEFFFF	4 K	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Block2	0xFFFD0000	0xFFFDFFFF	4 K	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Block3	0xFFFC0000	0xFFFCFFFF	4 K	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Block4	0xFFFB0000	0xFFFBFFFF	4 K	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Block5	0xFFFA0000	0xFFFAFFFF	4 K	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Block6	0xFFFF9000	0xFFFF9FFF	4 K	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Block7	0xFFFF8000	0xFFFF8FFF	4 K	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Block8	0xFFFF4000	0xFFFF7FFF	16 K	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Block9	0xFFFF0000	0xFFFF3FFF	16 K	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Block10	0xFFFE0000	0xFFFEFFFF	16 K	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Block11	0xFFE00000	0xFFE0FFFF	16 K	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

3. How to Check Lock Bits Written in the MCU

The lock bit settings written in the MCU cannot be checked by Verify. To check the settings, from the [Device Information] menu, select [Read Block Operation].

4. Schedule for Fixing the Problem

This problem will be fixed in V3.05.00. This program will be available from July 20, 2018.

<Reference>

Lock bits that are written incorrectly can be corrected by running commands in V3.05.00.

Execute the following command in sequence for the blocks containing the lock bits to be corrected.

- (1) Block Erase command
- (2) Program command and Program Flash Options command

Revision History

Rev.	Date	Description	
		Page	Summary
1.00	Jul. 16, 2018	-	First edition issued

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