

# **R-IN32M3 Serial Flash Memory Instructions Manual**

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## Revision History

<b>Edition</b>	<b>Date of issue</b>	<b>Description</b>
1st Edition	Jun 28, 2013	• Initial publication
2nd Edition	Nov 27, 2013	• S25FL064 is supported

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# 1 Introduction

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This is a brief manual for writing to Serial flash memory.

For details of ICE operating instructions, see the microVIEW-PLUS User's Manual (Common Edition) and microVIEW-PLUS User's Manual (MPU-Specific Edition).

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## 2 Supported SLX (ZX) Versions

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Device Model	Supported Versions	
	SLX600	ZX600
R-IN32M3	2.50 or later	--

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## 3 Supported Serial Flash Memory Models

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Serial flash memories on the following table are supported.

Device Model	Supported serial flash memory models	
	Manufacturer	Model
R-IN32M3	SPANSION	S25FL032P0XNFI010
		S25FL064P0XNFI010

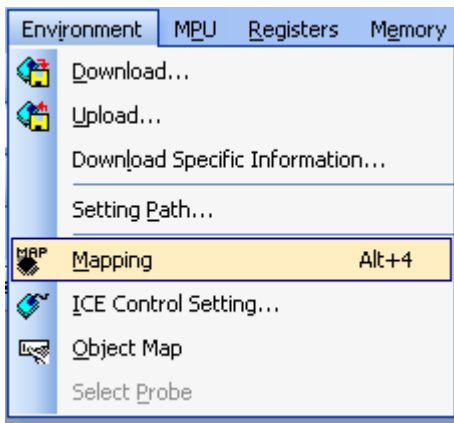
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## 4 Setting the Memory Mapping

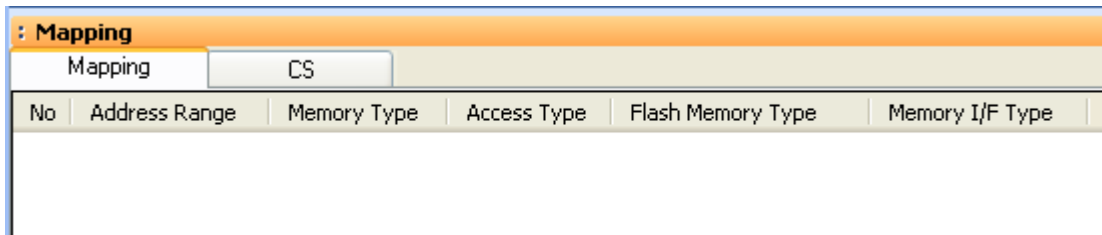
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### 4.1 Setting up Flash Memory Mapping

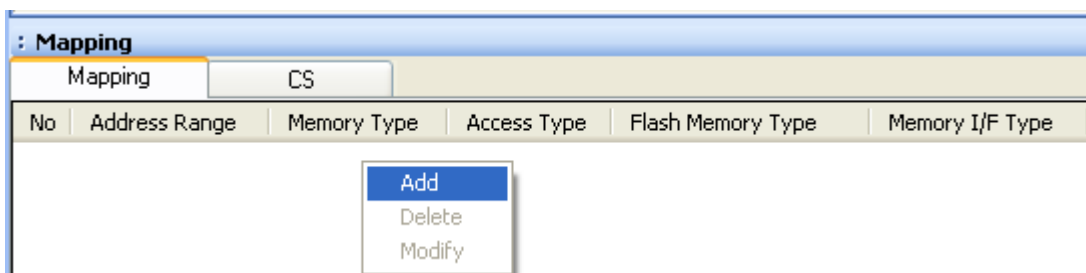
Open the memory mapping window by clicking **Environments – Mapping**.



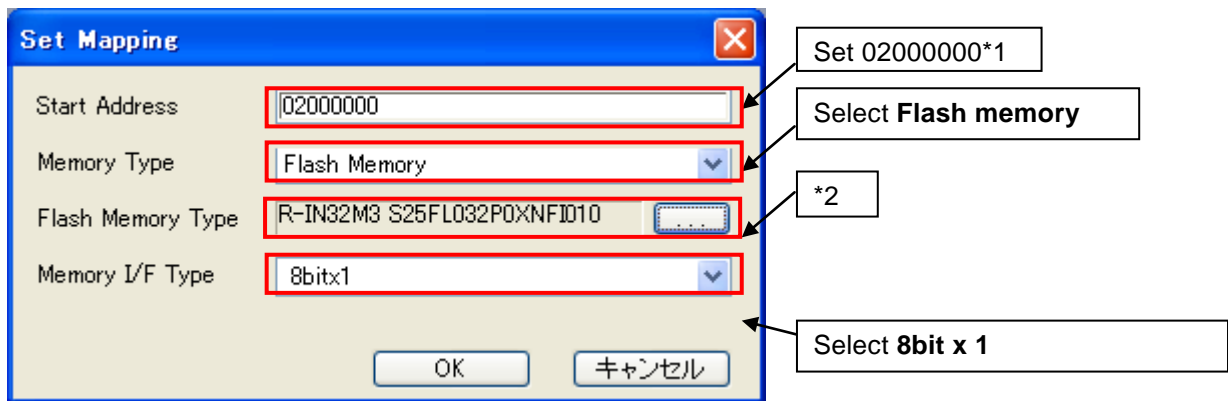
Memory map window as below is opened.



Right-click on the memory mapping window, and then select **Add**.



Configure the setting as the example below.



- ※1 Enter a start address of serial flash memory mapped on SoC.
- ※2 Select the flash memory definition file (.frd) in accordance with your flash memory.  
frd name: MPU type name\_Serial flash type name.frd

## 4.2 Setting up User RAM for ICE

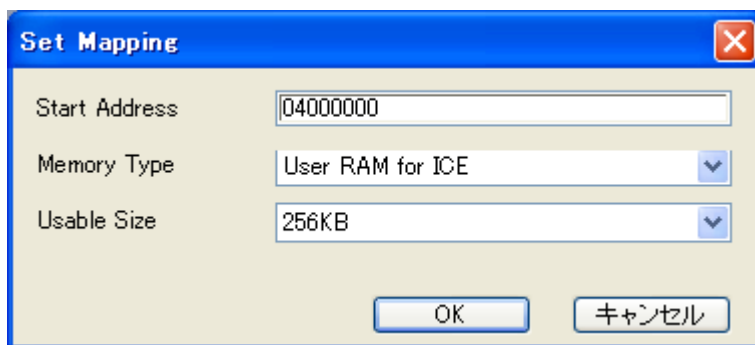
You can increase a download speed for flash memory by mapping a user RAM for ICE.

**You can download the data to flash memory without the mapping setting.**

For User RAM for ICE, specify an area where ICE can occupy.

The following example is for when setting 256KB from 0x04000000.

For the actual settings, refer to the MPU memory map of yours.





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## **5 Erase the Flash Memory**

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For details, see the microVIEW-PLUS User's Manual (MPU-Specific Edition).

Details of memory mapping settings are described on this manual. Please refer to microVIEW-PLUS User's Manual (MPU-Specific Edition) for other contents.

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## **6 Download to Flash Memory**

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For details, see the microVIEW-PLUS User's Manual (MPU-Specific Edition).

Details of memory mapping settings are described on this manual. Please refer to microVIEW-PLUS User's Manual (MPU-Specific Edition) for other contents.

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## 7 Software Break in Flash Memory

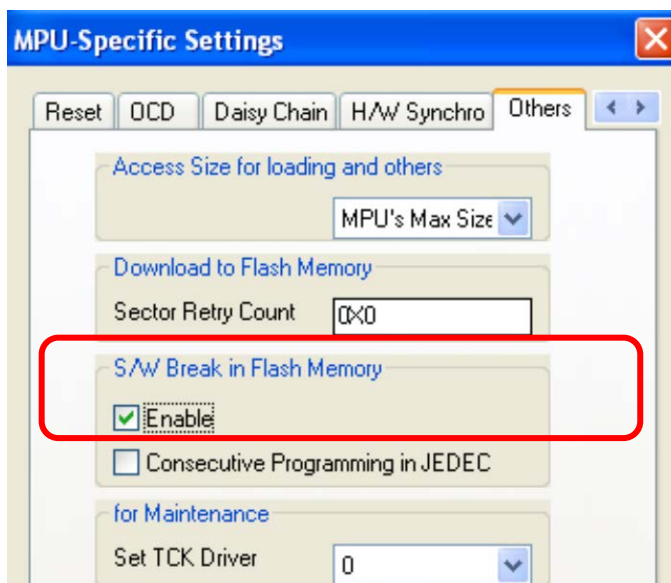
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For details, see the microVIEW-PLUS User's Manual (MPU-Specific Edition).

Details of memory mapping settings are described on this manual. Please refer to microVIEW-PLUS User's Manual (MPU-Specific Edition) for other contents.

You are not allowed to set up software break in the flash memory in the initial state. In case you try to set up software break in the flash memory with the disabled status, it results in "ICE Error No. 8c4: Set Software Break Verify Error".

To enable software break setting for flash memory, select the **Enable** check box of S/W Break in Flash Memory on the Others tab of the MPU-Specific Settings dialog box.



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## **8 Memory dump on the Serial Flash Memory**

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In the same way as other memories (such as RAM), you can do memory dump by specifying the serial flash area mapped on Soc.

Make sure to set a communication mode control register of SoC (SFMCMD) to ROM access mode in advance.

(It is set to ROM access mode right after resetting the SoC.)

\* If it is set to direct communication mode, 0 is readout when you do memory dump of serial flash area.

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## 9 Notes & Points

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### 9.1 Watchdog Timer

Once it is allowed to operate, watchdog timer doesn't stop until reset is input.

(For details, see the MPU User's Manual.)

Make sure to stop the watchdog timer when you do debugging.

### 9.2 Serial flash communication mode of SoC

Download and software break are correctly functioned under the ROM access mode.

Make sure to set a communication mode control register of SoC (SFMCMMD) to ROM access mode.

It is set to ROM access mode right after the download, sector erase, and flash software break.

### 9.3 Protection function of Serial flash

#### 9.3.1 Block protection

You can do download even if the serial flash is under a block protection.

#### 9.3.2 Status Register Write Disable function

For serial flash, S25FL032P0XNFI010 (by SPANSION), you can set write-protect to the status register to not overwrite the protect contents.

You can do the flash download even if the status register is write-protected, but you cannot release the setting of write of status register unless W#/ACC pin is input by Hi. This is a specification of serial flash.

If you connect the W#/ACC to the general pin, set the status register to be writable by setting the register value.

For details on how to set it, see manuals of MPU and serial flash you are using.

### 9.4 Software Break in Flash Memory

The ICE internally rewrites the flash memory when running the program after setting the software break in flash memory.

Therefore temporarily you cannot use microVIEW-PLUS until it is ready.