TMPM3xx Serial Flash Memory Instructions Manual

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Revision History

Edition	Date of issue	Description
First Edition	January 31, 2012	• Initial publication
2nd Edition	April 20, 2012	• Manual configuration is changed. • Section 4.2.2.1 "SSP Channel" and Section 4.2.2.2 "GPIO Settings" Descriptions are changed.
3rd Edition	May 31, 2012	• TMPM32B is supported.

Contents

1   Introduction

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).

2 Supported SLX(ZX) Versions

Device Model	Supported Versions	
	SLX600	ZX600
TMPM320	2.11 or later	--
TMPM32B	2.13 or later	--

3 Supported Serial Flash Memory Models

Serial flash memories on the following table are supported.

| Soc	Supported serial flash memory models	
	Manufacturer	Model
TMPM320	Winbond	W25Q16BV
	Winbond	W25Q32BV
	Macronix	MX25L3206E
TMPM32B	Winbond	W25Q128BV
	Micronix	MX25L6435E
	Macron	N25Q064A13

4 Advance Preparation

4.1 Reset Type

Open the RESET tab of the MPU-specific settings from MPU menu, and then select **VECTRESET** for the reset type.

4.2 When using TMPM320

4.2.1 Settings for when ETM is disabled

ETM is disabled as default if you are using M320 board.

In such cases, disable ETM on the ICE too.
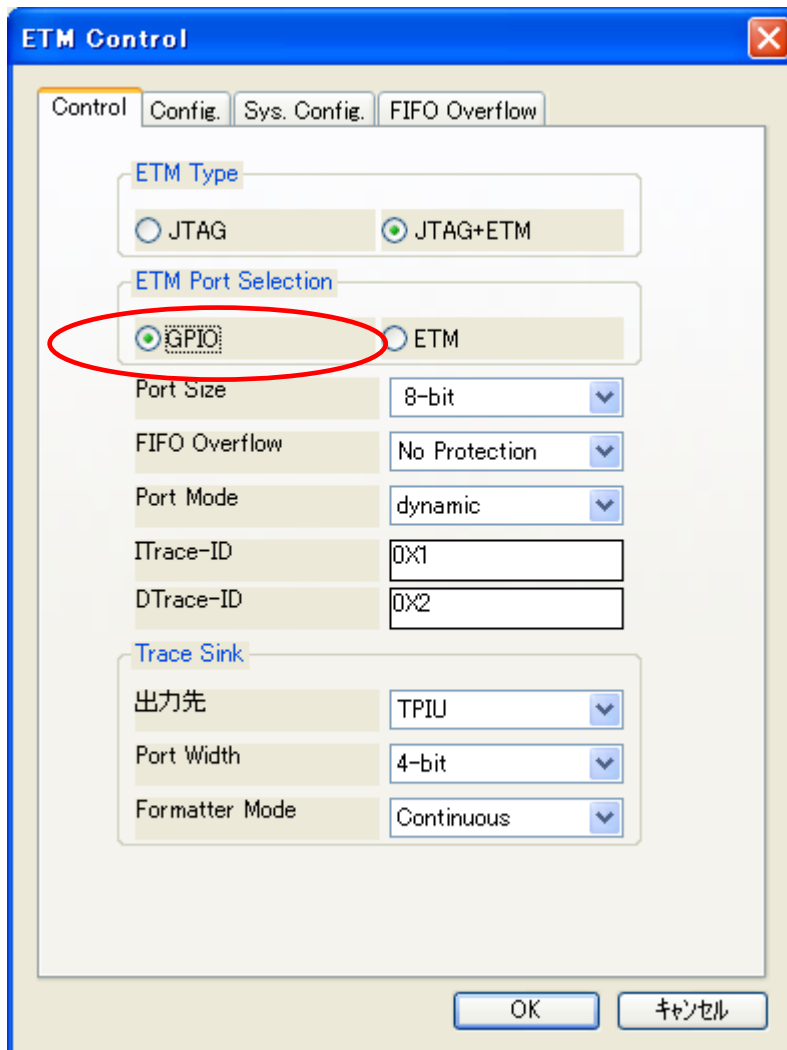
4.2.2 Edit Flash Memory Definition File (*.frd) for when Using TMPM320

4.2.2.1 SSP Channel

SSP channel is set to 2 as default. In case other SSP channel will be used, open the frd file and then change the following setting.

Exp_Param2 = Channel number (2 is set as default)

Configure the settings of SPxDO, SPxDI, and SPxCLK on GPIO port which is corresponding to the channel number.

4.2.2.2 GPIO Settings

Configure CE, WP and HOLD signals on the serial flash memory and GPIO connection information in the frd file as definitions of Exp_Param7 to 12.

Exp_Param7	CE base address	Defines the base address of GPIO connecting to CE
Exp_Param8	CE bit number	Defines the bit number of GPIO connecting to CE
Exp_Param9	WP base address	Defines the base address of GPIO connecting to WP
Exp_Param10	WP bit number	Defines the bit number of GPIO connecting to WP
Exp_Param11	HOLD base address	Defines the base address of GPIO connecting to HOLD
Exp_Param12	HOLD bit number	Defines the bit number of GPIO connecting to HOLD

These are defined as follows as default.

Exp_Param7=0x4000B000;   7:CE Base ADDR

Exp_Param8=2;   8:CE Bit No

Exp_Param9=0x4000A000;   9:WP Base ADDR

Exp_Param10=2;   10:WP Bit No

Exp_Param11=0;   11:HOLD Base ADDR

Exp_Param12=0;   12:HOLD Bit No

The figure below is a default connection diagram.
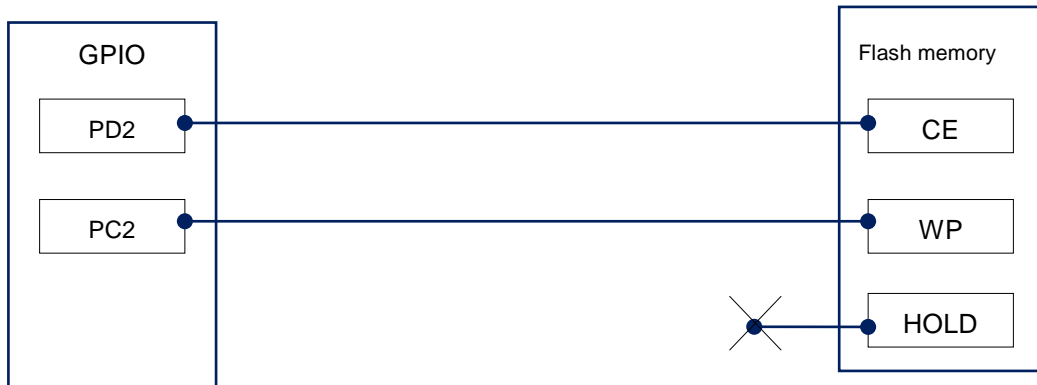
The lists below show examples of definition for each connection pattern.

1.   CE connection examples:

Example of Connection	Base address	Bit number	SSP Channel
Connecting PA2 to CE on serial flash memory	0x40008000	2	0
Connecting PA6 to CE on serial flash memory	0x40008000	6	1
Connecting PD2 to CE on serial flash memory	0x4000B000	2	2
Connecting PD6 to CE on serial flash memory	0x4000B000	6	3

2.　　　　WP connection examples:

Example of Connection	Base address	Bit number
Connecting PC0 to WP on serial flash memory	0x4000A000	0
Connecting PC1 to WP on serial flash memory	0x4000A000	1
Connecting PC2 to WP on serial flash memory	0x4000A000	2
Connecting PC3 to WP on serial flash memory	0x4000A000	3
Connecting PC4 to WP on serial flash memory	0x4000A000	4
Connecting PC5 to WP on serial flash memory	0x4000A000	5
Connecting PC6 to WP on serial flash memory	0x4000A000	6
Connecting PC7 to WP on serial flash memory	0x4000A000	7

3.　　　　HOLD connection examples:

Example of Connection	Base address	Bit number
Connecting PB0 to HOLD on serial flash memory	0x40009000	0
Connecting PB1 to HOLD on serial flash memory	0x40009000	1
Connecting PB2 to HOLD on serial flash memory	0x40009000	2
Connecting PB3 to HOLD on serial flash memory	0x40009000	3
Connecting PB4 to HOLD on serial flash memory	0x40009000	4
Connecting PB5 to HOLD on serial flash memory	0x40009000	5
Connecting PB6 to HOLD on serial flash memory	0x40009000	6
Connecting PB7 to HOLD on serial flash memory	0x40009000	7

Notes & Points:

1.　　　　Make sure to configure the setting within the GPIO port range for the base address and bit number.

Port	Base address	Bit number
PortA	0x40008000	0 to 7
PortB	0x40009000	0 to 7
PortC	0x4000A000	0 to 7
PortD	0x4000B000	0 to 7
PortE	0x4000C000	0 to 7
PortF	0x4000D000	0 to 7
PortG	0x4000E000	0 to 7

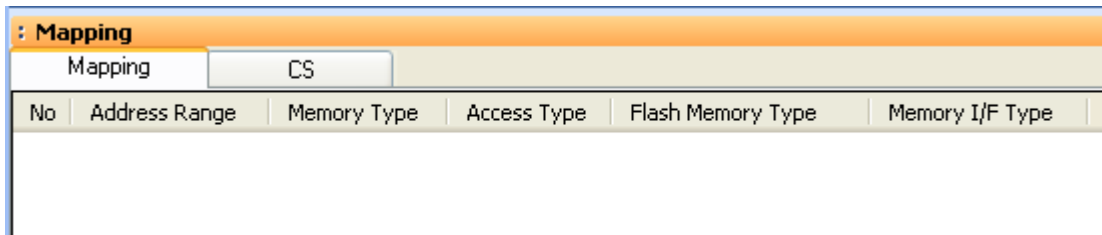2.　　　　In case 0 is set for the base address, no setting is necessary.

5   Setting the Memory Mapping

5.1   Setting up Flash Memory Mapping

Open the memory mapping window by clicking **Environments** – M**apping**.
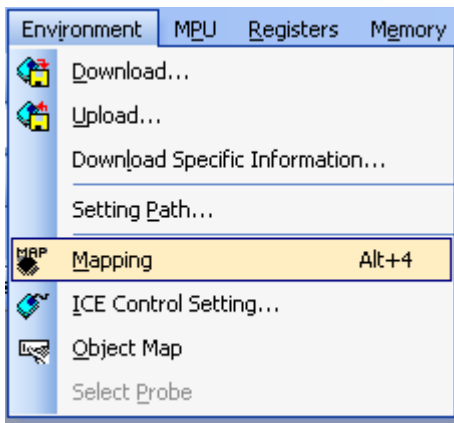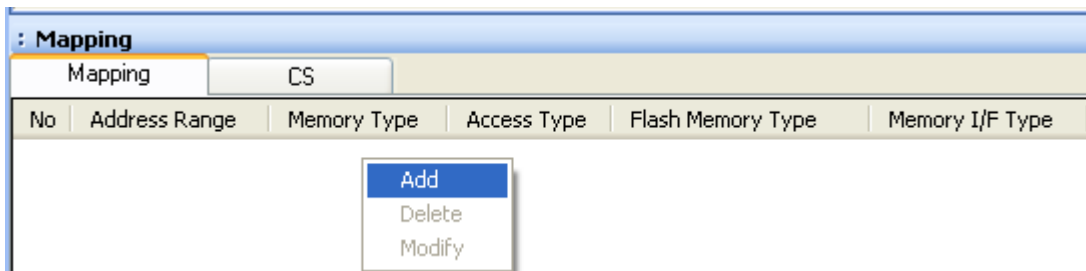
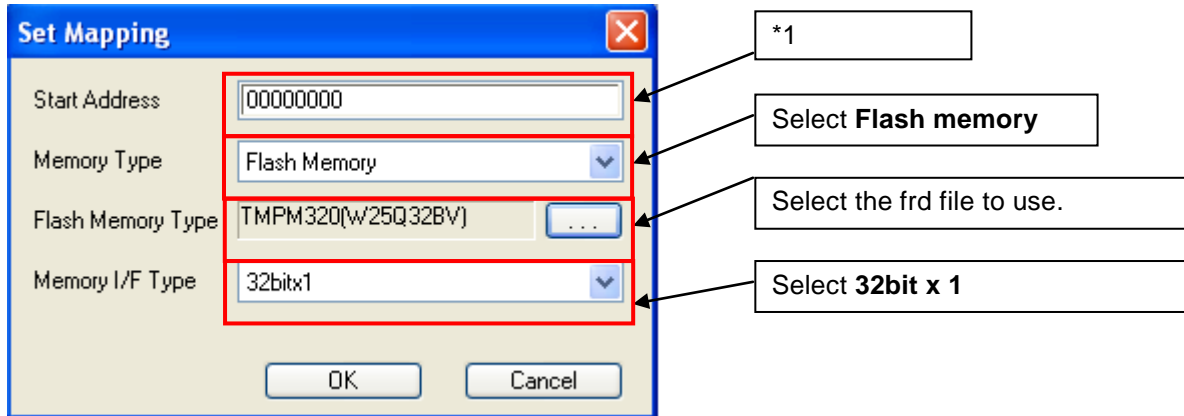

Memory map window as below is opened.

Set the mapping.

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

Configure the setting as the example below.

*1:

SoC	Start Address
TMPM320	0x00000000
TMPM32B	0x10000000

Notes & Points for TMPM320

Set the memory mapping on the serial flash memory area only when downloading to the serial flash memory or erasing the sector.

This area is placed on the external area0 of the TMPM320 memory map.

Memory rewrite process from a debugger to the external area0 may be failed if you made a memory mapping setting on the serial flash memory area.
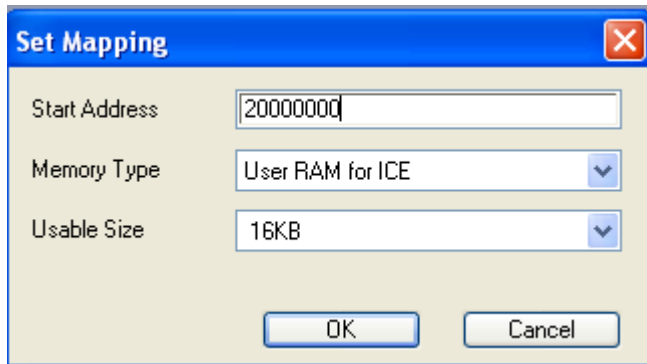
5.2   Setting up User RAM for ICE

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

You can download to flash memory without the mapping setting though.

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

The following example is for when setting 16KB from 0x20000000.

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

6 Download to Flash Memory

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.

7 S/W Break in Flash Memory

7.1 When using TMPM320

Not Supported.

7.2 When using TMPM32B

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

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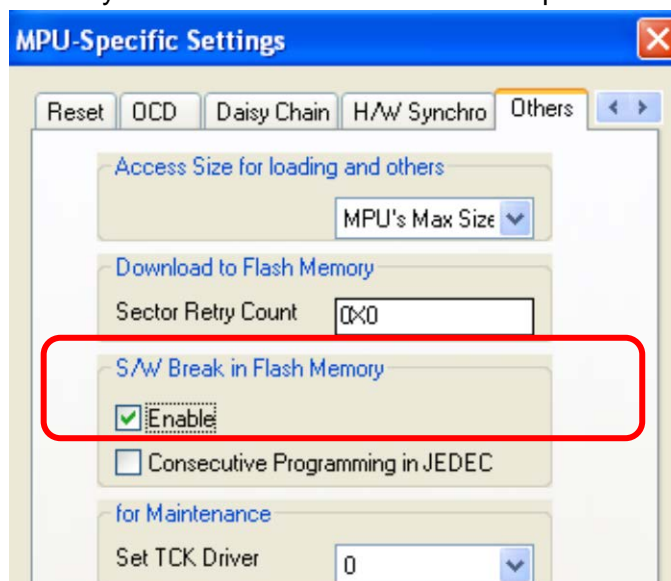
8   Notes & Points

8.1   When using TMPM320

8.1.1 Memory Dump on the Serial Flash Memory

Not Supported.

8.1.2 Past Downloaded Data

If the downloaded data of serial flash memory is not by sector, an area which is not the downloaded target within the sector is displayed as ALL 0xFF, instead of the past downloaded data.

8.2   When using TMPM32B

8.2.1 Direct Access Function of TMPM32B

TMPM32B has a direct access function.

Functions described on "Download to Flash Memory" and "Software Break in Flash Memory" are available when the direct access function is turned on.

Those are set to ON as default of SoC.

8.2.2 Memory Dump on the Serial Flash Memory

This function is available when the direct access function is turned on.
Displayed data are not guaranteed if the direct access function is turned off.

8.2.3 Past Downloaded Data

Past downloaded data and new downloaded data are merged if the direct access function is turned on.
Data other than download data are not guaranteed if the direct access function is turned off.