Toshiba TMPV770
Serial Flash Memory Support
Download Procedure Manual

DTS INSIGHT CORPORATION

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1 Introduction

This is a brief manual for writing to serial flash memory supporting TMPV770.
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 Install Kit CD Versions

Device Model	Supported Versions
	adviceLUNAII H2X600IK
TMPV770 (Cortex-R4 DL0)	7.04 or later

3 Supported Serial Flash Type Name

Serial flash memories on the following table are supported.

Soc	Supported serial flash		
	Manufacturer	Model	Size
TMPV770 (Cortex-R4 DL0)	Cypress	S26KS512S(HyperFlash)	64MB

4 Supported Functions

No.	Function
1	Serial flash download (with verify function)
2	Erasing serial flash sector

5 Advance Preparation

See the Startup Guide (TMPV770) and create Cortex-R4 DL0 project.

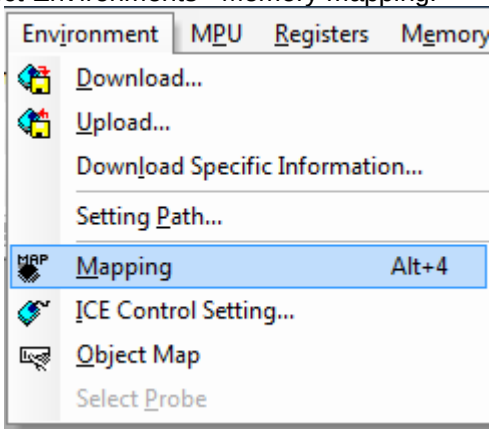
6 Setting the Memory Mapping

Set memory mapping from a project connected to Cortex-R4 DL0.

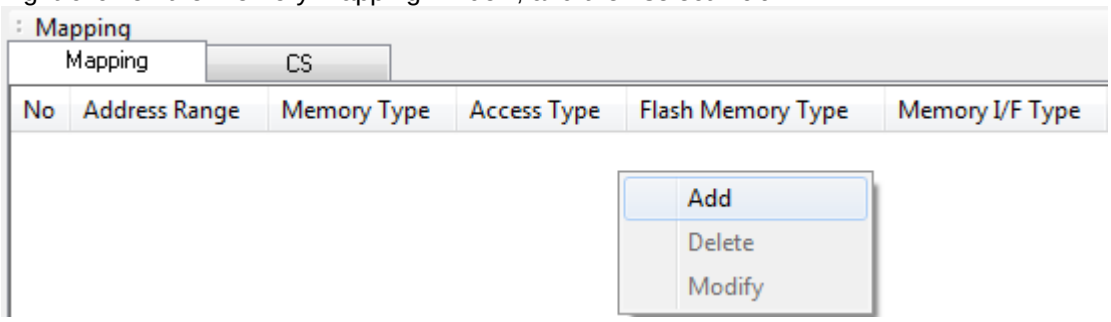
6.1 Setting up Flash Memory Mapping

Open the memory mapping window.

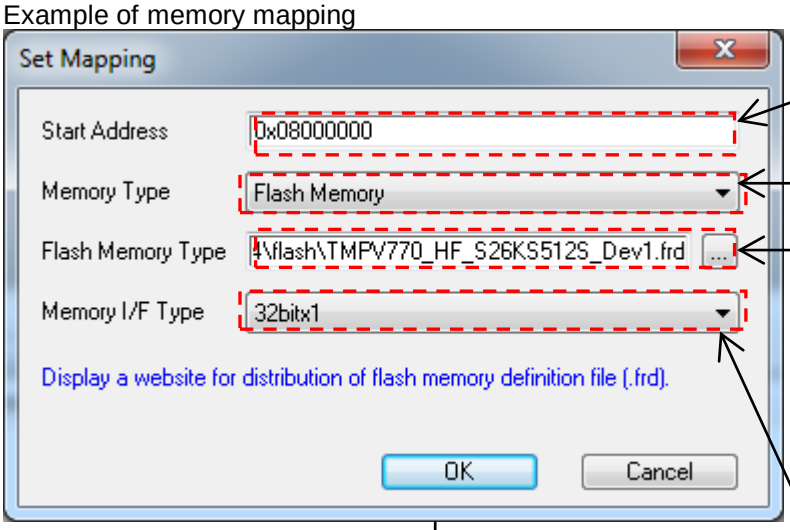
Select Environments - Memory mapping.



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



Example of memory mapping



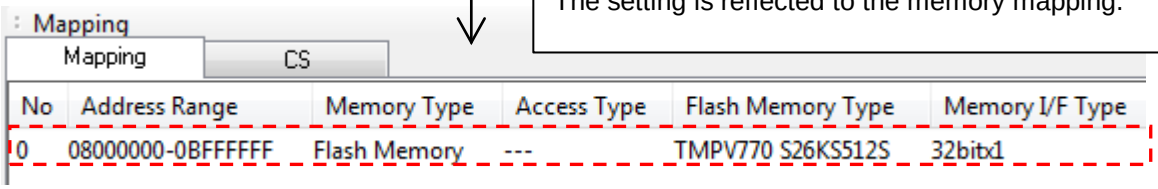
Set a start address of flash memory (0x08000000)

Select **Flash memory**

When device 1 is selected
TMPV770_HF_S26KS512S_Dev1.frd
When device 2 is selected
TMPV770_HF_S26KS512S_Dev2.frd
* Acquire frd file from our support page.

Select 32bit x 1

The setting is reflected to the memory mapping.

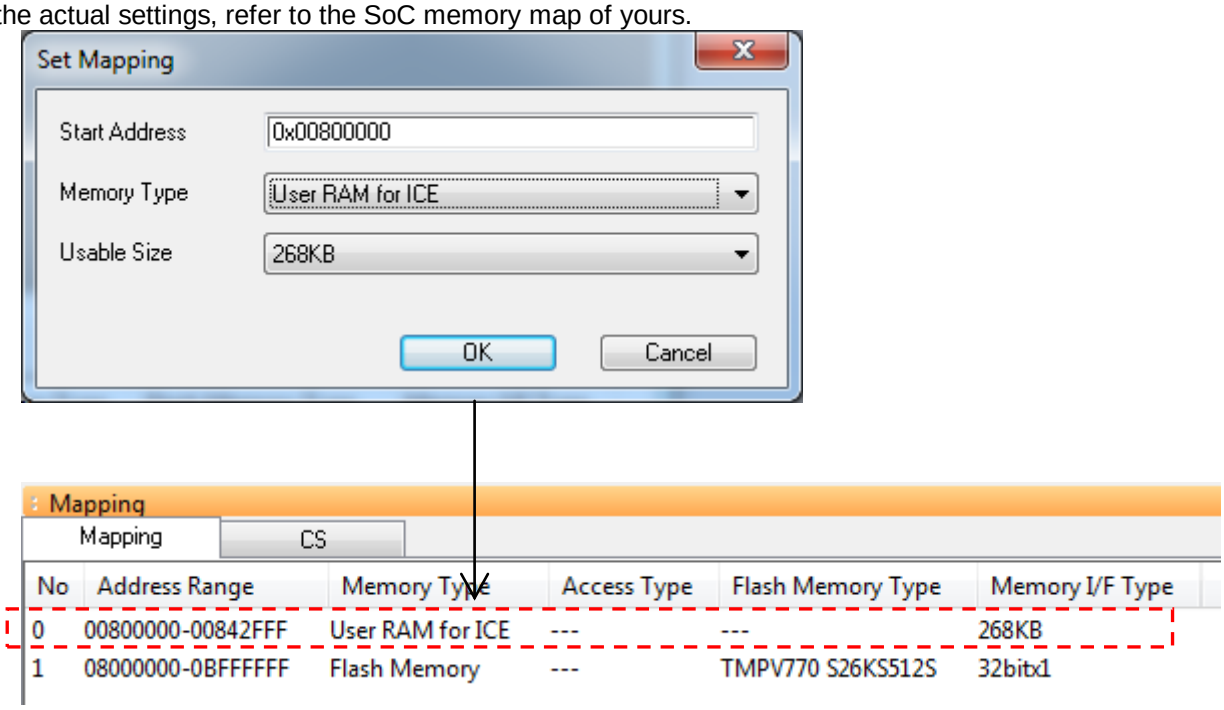


6.2 Setting Up User RAM for ICE

Make sure to set this.

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

The following example is for when setting 268KB from 0x00800000.
For the actual settings, refer to the SoC memory map of yours.



7 Erase the Flash Memory

For the details of flash memory erasing, see 5.2 “Erase the Flash Memory” in microVIEW-PLUS User’s Manual Common Edition (mvwPLUSj.pdf).
Details of memory mapping settings are described on this manual. Please refer to the microVIEW-PLUS User’s Manual Common Edition for other contents.

8 Download to Flash Memory

For details, see Chapter 5 “Downloading a Program to Flash Memory” in the microVIEW-PLUS User’s Manual (Common Edition) (mvwPLUSj.pdf).
Details of memory mapping settings are described on this manual. Please refer to the microVIEW-PLUS User’s Manual Common Edition for other contents.

9 Software Break in Flash Memory

Not Supported.

10 Setting Frd File Parameter

You can change the settings listed below by changing the parameter setting under [ExpParam] of Frd file

Target Frd file

TMPV770_HF_S26KS512S_Dev1.frd

TMPV770_HF_S26KS512S_Dev2.frd

Description format

Exp_Param#=<set value>

* Specify <set value> in hexadecimal with 0x.

Example: When 0x123456 is set for Exp_Param5

Exp_Param5=0x123456

[ExpParam] section

No	Parameter Name	Meaning
1	Exp_Param1	Do not change it.
2	Exp_Param2	Do not change it.
3	Exp_Param3	Do not change it.
4	Exp_Param4	SER register setting value 0x00000001 : Device1 0x00000002 : Device2
5	Exp_Param5	SIIO_NORC_CKCTL Register setting value
6	Exp_Param6	SIMEMC_RDQSDELAY Register setting value
7	Exp_Param7	SIIO_PUDE3[15:5] Register setting value (LSB-justified)
8	Exp_Param8	SIIO_PUDE3[15:5] Register setting value (LSB-justified)
9	Exp_Param9	SIIO_PUDE9[31:20] Register setting value (LSB-justified)
10	Exp_Param10	SIIO_DSEL10 Register setting value
11	Exp_Param11	BAUDR Register setting value
12	Exp_Param12	DDR DRIVE EDGE Register setting value
13	Exp_Param13	Do not change it.
14	Exp_Param14	See 11.4 “Store Data and Program Mode” and make necessary changes.

11 Cautions and Restrictions

11.1 The followings are not supported.

If you perform the following operations without setting RAM for ICE, an error will be shown.
Erasing flash memory
Downloading to flash memory
Make sure to set RAM for ICE before these operations.

Software break setting in serial flash area is not supported.
If you execute it, an error will be shown.

11.2 Connect core when flash downloading

Connect core when flash downloading supports only TMPV770 Coretex-R4 DL0.
When downloading to the flash memory, perform it in an environment which is connected to Cortex-R4 DL0 by microVIEW-PLUS.

11.3 Serial flash-specific protection function

Some of the serial flashes have specific protection function.
Release the specific protection function before programming the flash.

11.4 Store Data and Program Mode

You can switch enable and disable Store Data and Program Mode according to Exp_Param14 setting of Frd file.Please rewrite the setting as follows where necessary.

	Exp_Param14 setting value	Description
Disable Store Data and Program Mode	0x0000001C	The area other than the area to be downloaded is 0xFF (erased state).
Enable Store Data and Program Mode(default)	0x00000018	After reading out the data other than in the download area, merge the data with downloaded data, and program them. When this mode is enabled, you can edit the data, but the downloading time becomes longer than when the mode is disabled.