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Spec No: 002-05268

Spec Title: AN205268 - F2MC-8FX FAMILY MB951XX SERIES ASYNCHRONOUS FLASH PROGRAMMING

Replaced By: NONE

AN205268

F²MC-8FX Family MB951XX Series Asynchronous Flash Programming

This application note describes how to program the Flash devices of the Cypress F2MC-8FX MB951xx series in serial asynchronous mode.

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1 Introduction

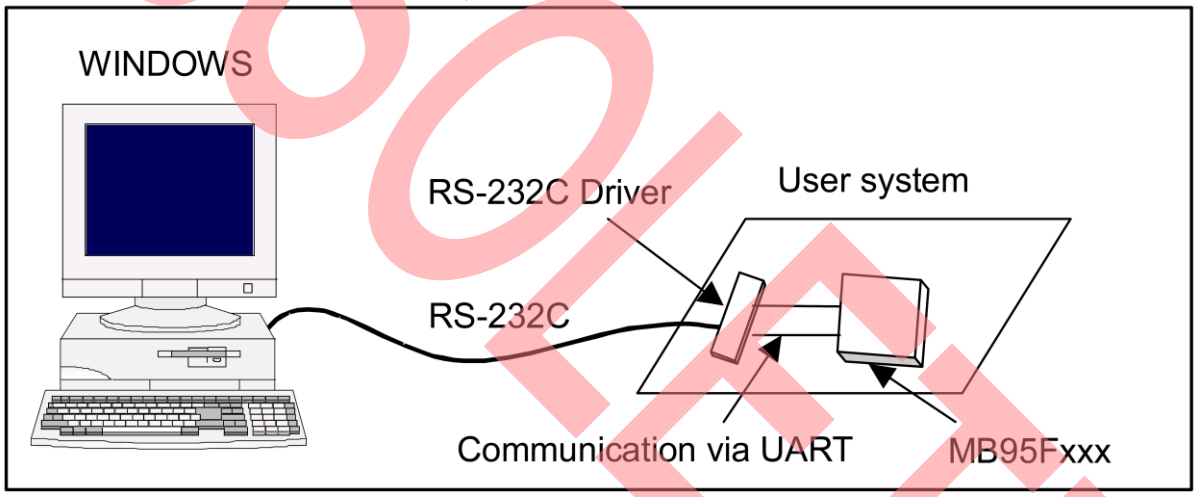
This application note describes how to program the Flash devices of the Cypress F²MC-8FX MB951xx series in serial asynchronous mode.

For additional information refer to “Cypress Flash MCU Programmer for F²MC-8FX Specifications”.

2 Hardware Setup

This chapter explains how to setup hardware for flash programming.

2.1 Connection to PC



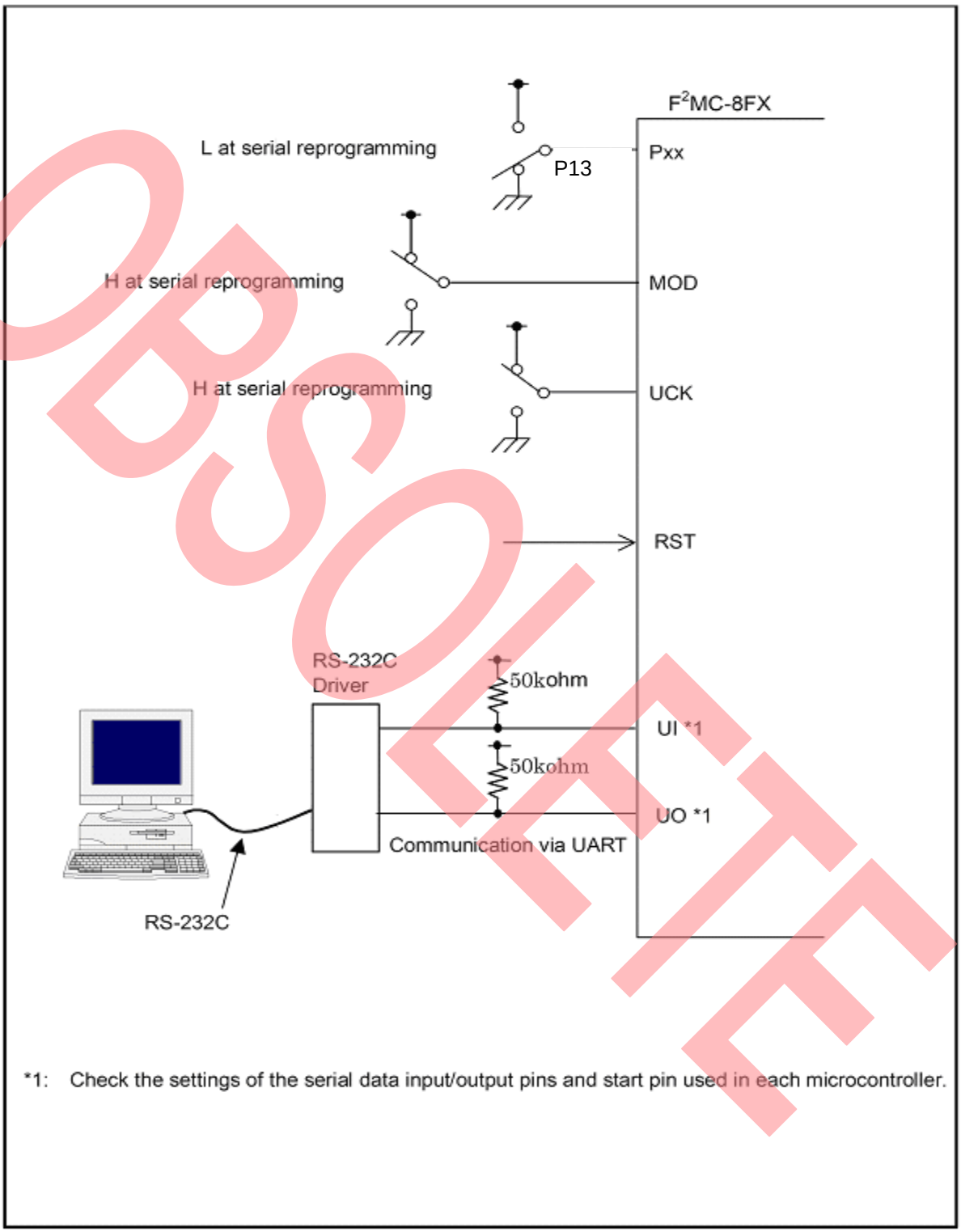
Connect the microcontroller’s UART to the PC (COM 0 - COM 8) via RS232 communication cable. Note that the microcontroller needs an external RS232 driver for communication.

2.2 Settings on microcontroller board

To set the microcontroller into serial asynchronous programming mode the following pins have to be set according to the following table:

Pin name	Pin description	Logical level
P12 / UCK0	UART/SIO clock input	High (pull-up)
MOD	Operation mode specification	High
P13		Low
P10 / UI0	Serial input	High
P11 / UO0	Serial output	High

Figure 1. Configuration for serial asynchronous programming mode



*1: Check the settings of the serial data input/output pins and start pin used in each microcontroller.

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3 Software Setup

This chapter explains how to setup Cypress Flash Programmer Software for F²MC-8FX family.

3.1 Installation

Software can be downloaded from website: www.cypress.com/supporttools/8fx.

To install the Cypress Flash 8FX-MCU Programming Software you have to execute the setup program "PCW8FXsetup.exe". Then follow the steps of the setup dialog.

After successful installation you will find the Cypress Flash Programmer in folder:

"C:\Program Files\Cypress\Cypress Flash MCU Programmer\FMC8FX\flash.exe"

To start Flash Programmer click 'Windows Start button' => 'Programs' => 'Cypress FLASH MCU Programmer' => 'FMC8FX'

The symbol of this tool looks like the following picture:

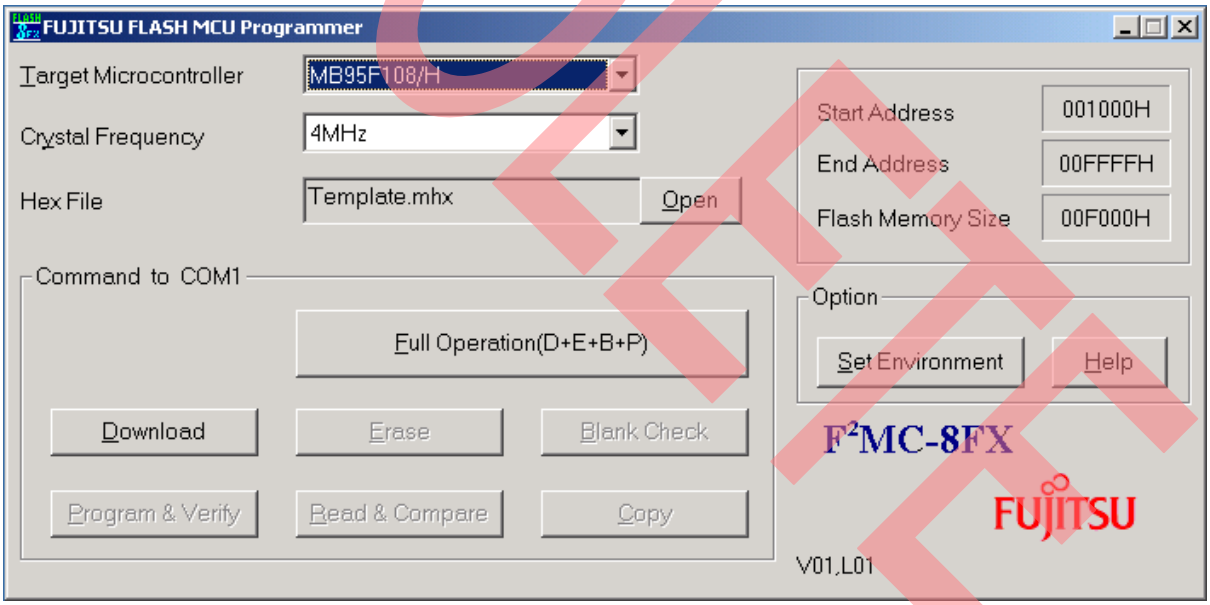


4 Flash Programmer

This chapter explains how to use Cypress Flash Programmer Software for F²MC-8FX family.

4.1 Settings

When the Cypress 8FX-MCU Flash Programmer is executed the following window occurs:



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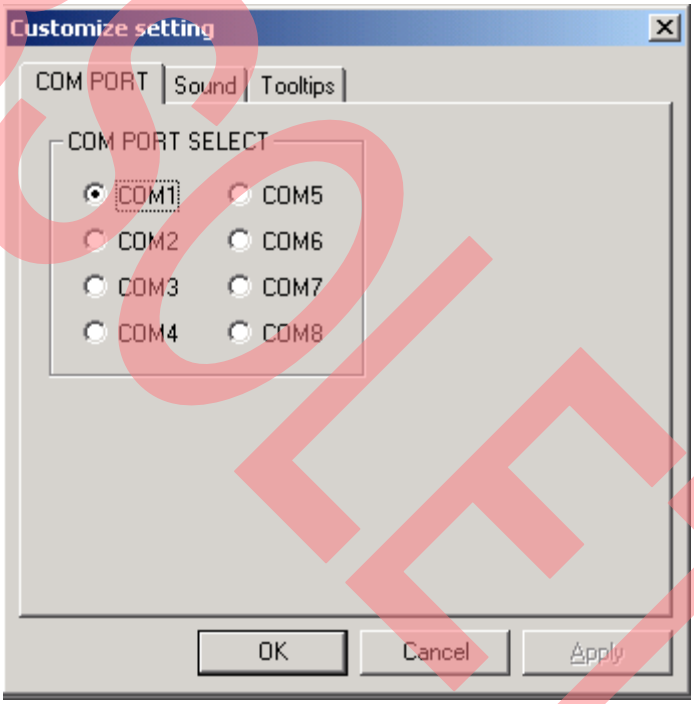
Select the target microcontroller and crystal frequency from the shortlist.

Following entries can be chosen:

Product type	Crystal frequency
MB95F108/H	2MHz, 3MHz, 3.58 MHz, 4MHz, 4.92MHz, 5MHz, 6MHz, 8MHz, 10MHz, 12MHz, 16MHz, 20MHz
MB95F118/H	
MB95F128/H	
MB95F136/H	
MB95F146	
MB95F156/M	
MB95F168/M	
MB95F176J	

To choose COM-port click on ***[Set Environment]*** and select the right PC COM port on the upcoming window.



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4.2 Programming

4.2.1 Full Operation

To choose program file click ***[Open]*** and browse to the file (mhx, cnv or ahx format is possible) you want to program to the 8FX microcontroller.

Click the ***[Full Operation]*** button. Following window is opened:



Reset your microcontroller and click ***[OK]***. Now a connection to the microcontroller is started and a control program is transferred. The needed steps like erase, blank check and programming are performed. After successful programming following message appears on screen.



Click ***[OK]***, set MOD pin of the microcontroller to low level to enter run mode and reset your microcontroller to start your application.

Note: Do not use [Full Operation] button with version V01L01a and V01L02!

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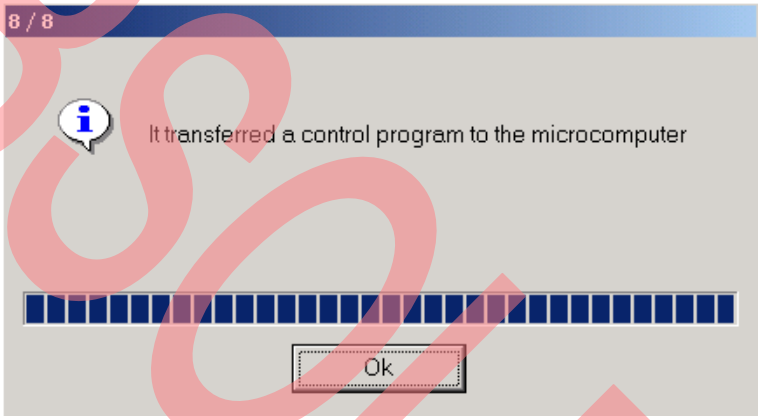
4.2.2 Single Steps

To choose program file click ***[Open]*** and browse to the file (mhx, cnv or ahx format is possible) you want to program to the 8FX microcontroller.

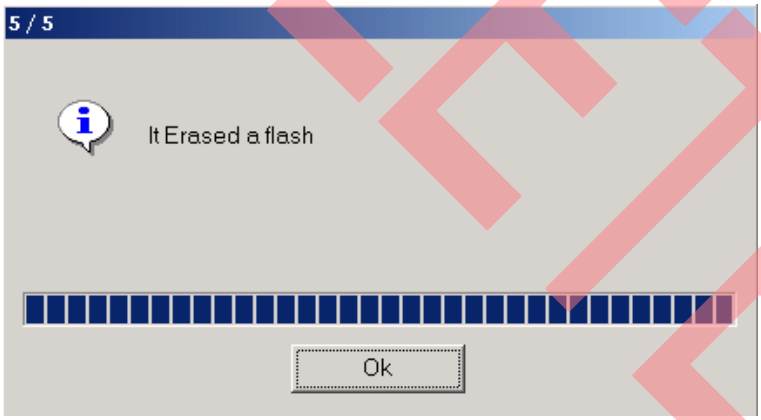
Click the ***[Download]*** button. Following window is opened:



Reset your microcontroller and click ***[OK]***. Now a connection to the microcontroller is started and a control program is transferred.



Click ***[OK]*** after successful download operation. To start next step click ***[Erase]*** button. A complete chip erase is executed.



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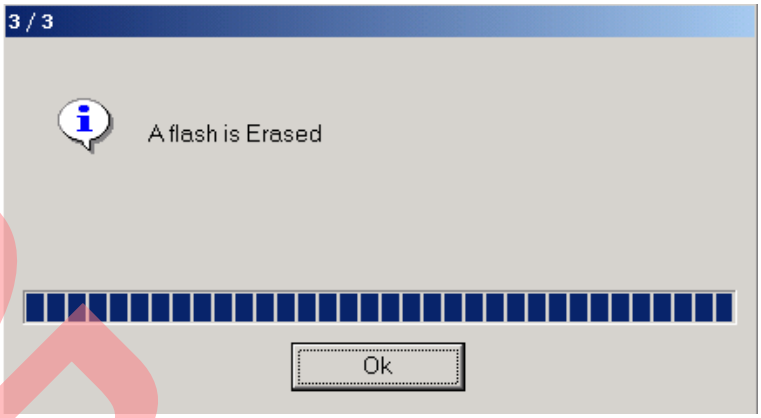
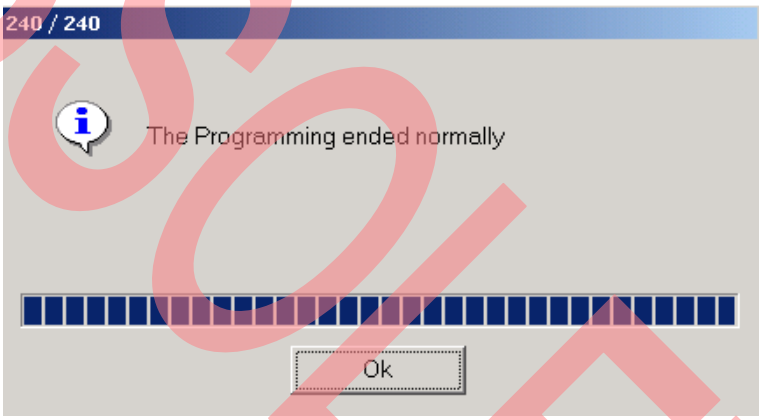
After a completed erase click ***[OK]***. Now a ***[Blank Check]*** can to be started. If flash is completely erased, the following window occurs.



Click ***[OK]*** to close window and start programming by clicking to ***[Program & Verify]*** button. If there are no errors, the following message is displayed.



Click ***[OK]***, set MOD pin of the microcontroller to low level to enter run mode and reset your microcontroller to start your application.

There are two additionally functions available:

Read & Compare: Compare Hex File with data in flash memory of microcontroller

Copy: Save data in flash memory of microcontroller to file

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Document History

Document Title: AN205268 - F²MC-8FX Family MB951XX Series Asynchronous Flash Programming

Document Number: 002-05268

Revision	ECN	Orig. of Change	Submission Date	Description of Change
**	—	WOFR	10/12/2004	Initial release.
			11/08/2005	Added MB95F128 and MB95F136.
			03/16/2006	Corrections.
			11/05/2007	Update, added full operation description.
*A	5265589	WOFR	05/10/2016	Migrated Spansion Application note from MCU-AN-395003-E-V13 to Cypress format.
*B	5612339	WOFR	01/31/2017	Spec obsoleted, no further updates planned.

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