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Spec Title: AN204894 - F2MC-8FX Family MB95330 Series LQFP32 PGM Adaptor

Replaced by: None

AN204894

F²MC-8FX Family MB95330 Series LQFP32 PGM Adaptor

This application note describes about the MB95330 LQFP32 PGM adaptor which is developed mainly as an independent on-board programming and debugging tool for the MB95330series LQFP32 package MCU. Its original function of programming and debugging after being installed on the MB95330 series EV board still remains.

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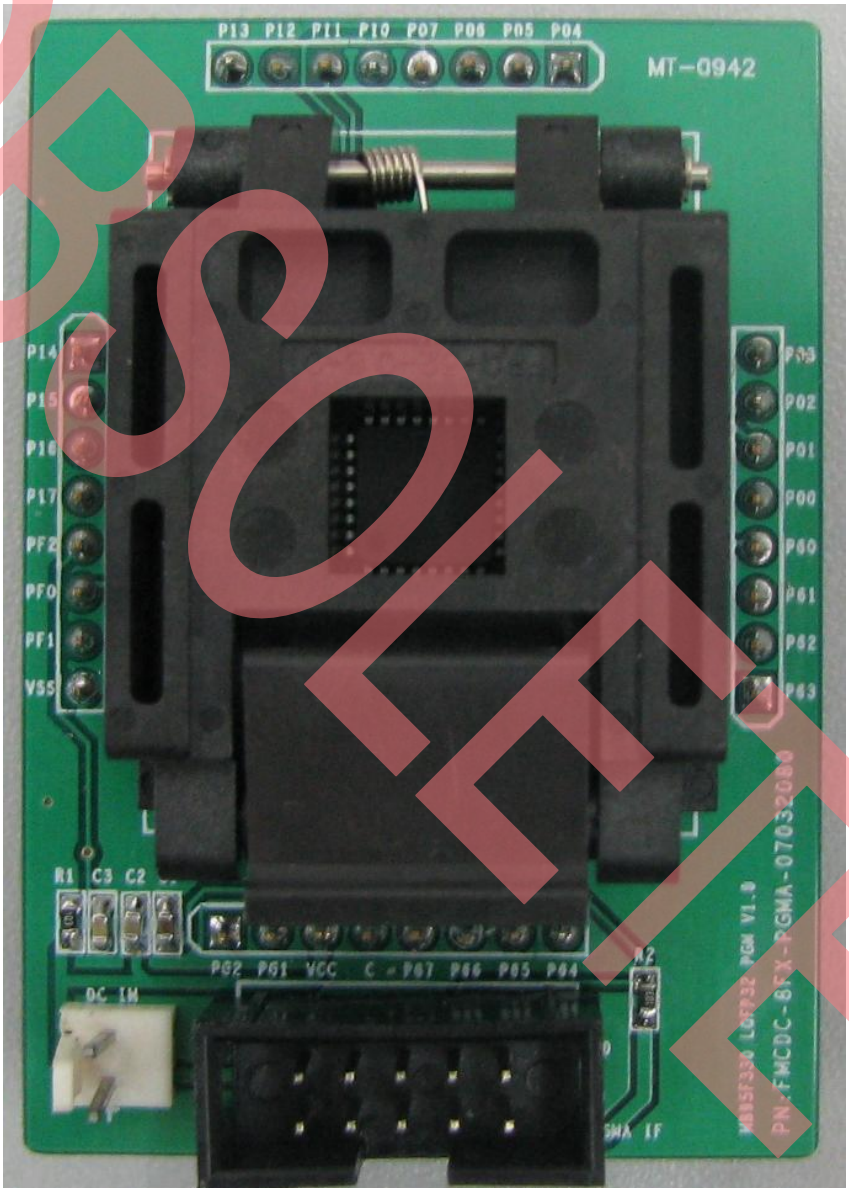
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1 Introduction

The MB95330 LQFP32 PGM adaptor is developed mainly as an independent on-board programming and debugging tool for the MB95330series LQFP32 package MCU. Its original function of programming and debugging after being installed on the MB95330 series EV board still remains. The picture of MB95330 series LQFP32 PGM adaptor is shown in Figure 1. Four 8-pin connectors are used to connect with MB95330 EV board. The PN of the MB95330 LQFP32 PGM is FMCDC-8FX-PGMA-07032080.

Figure 1. MB95330 LQFP32 PGM Adaptor



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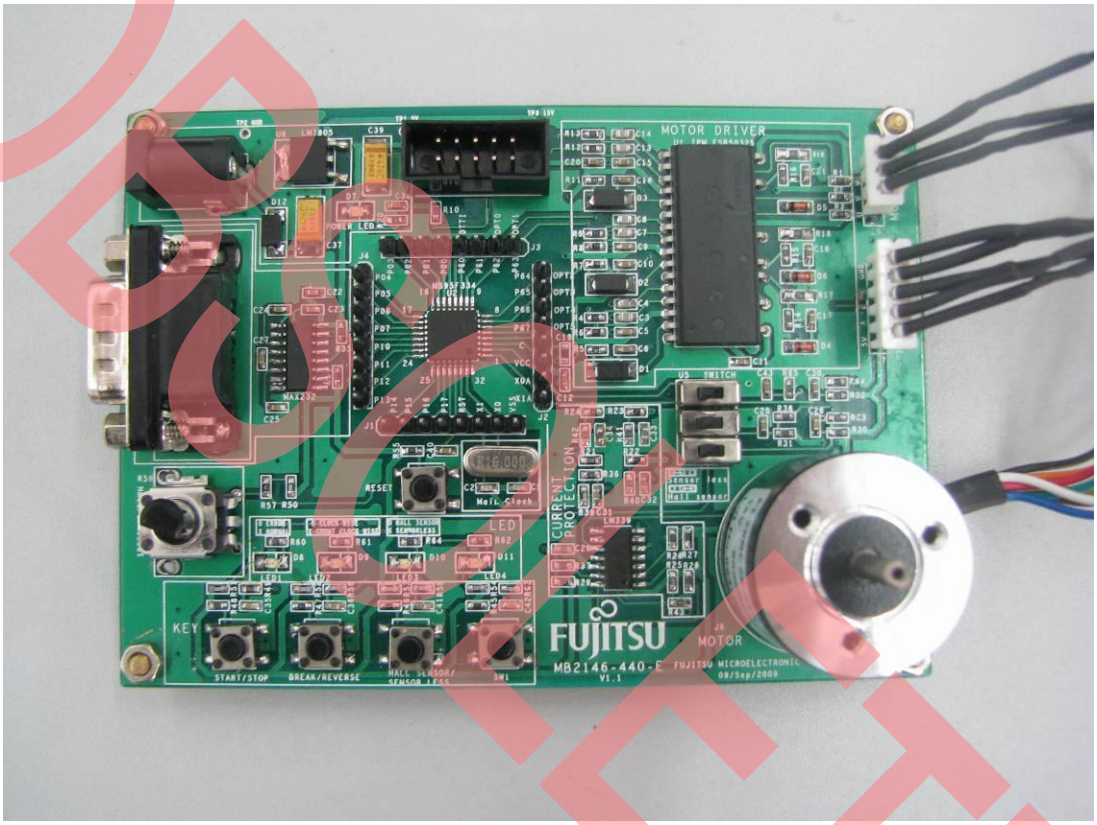
2 Application Environment

This chapter introduces the application environment of MB95330 LQFP32 PGM adaptor.

2.1 Mother Board

The mother board of MB95330 LQFP32 PGM adaptor is MB95330 EV board V1.2, as below picture. It can be gotten from MB95330 motor EV Board (PN: MB2146-440-E).

Figure 2. MB95330 EV Board V1.2



2.2 Debug Tool

The debug tool is BGMA (BGM Adaptor), the type of it is MB2146-08-E, as below picture.

Figure 3. BGM Adaptor



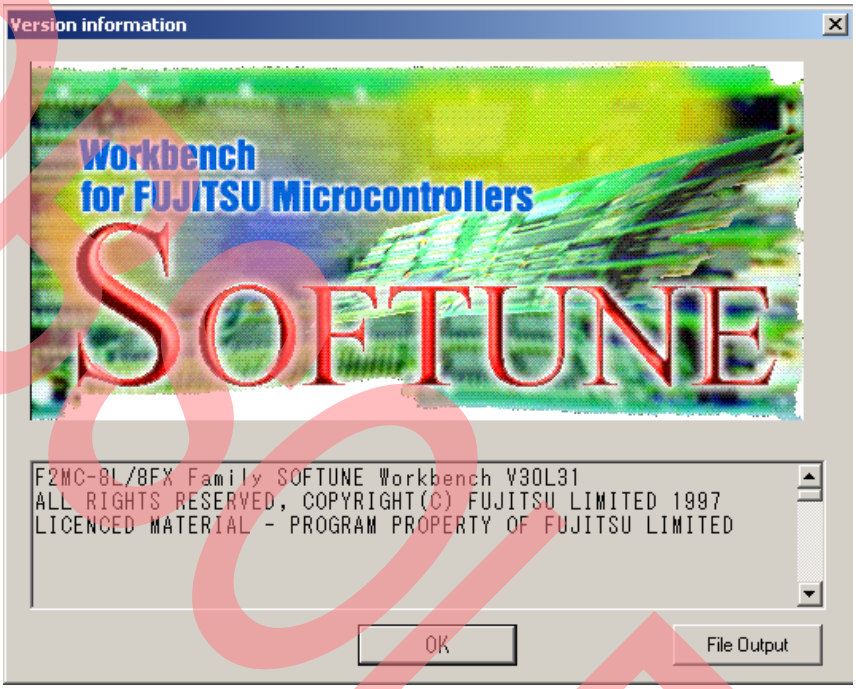
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2.3 SOFTUNE

SOFTUNE is used to program and debug, as software development environment. The version of it is F²MC-8L/8FX SOFTUNE Workbench V30L31, as below picture. It can be downloaded from the following website.

www.cypress.com/8fx-mb95330

Figure 4. SOFTUNE Version



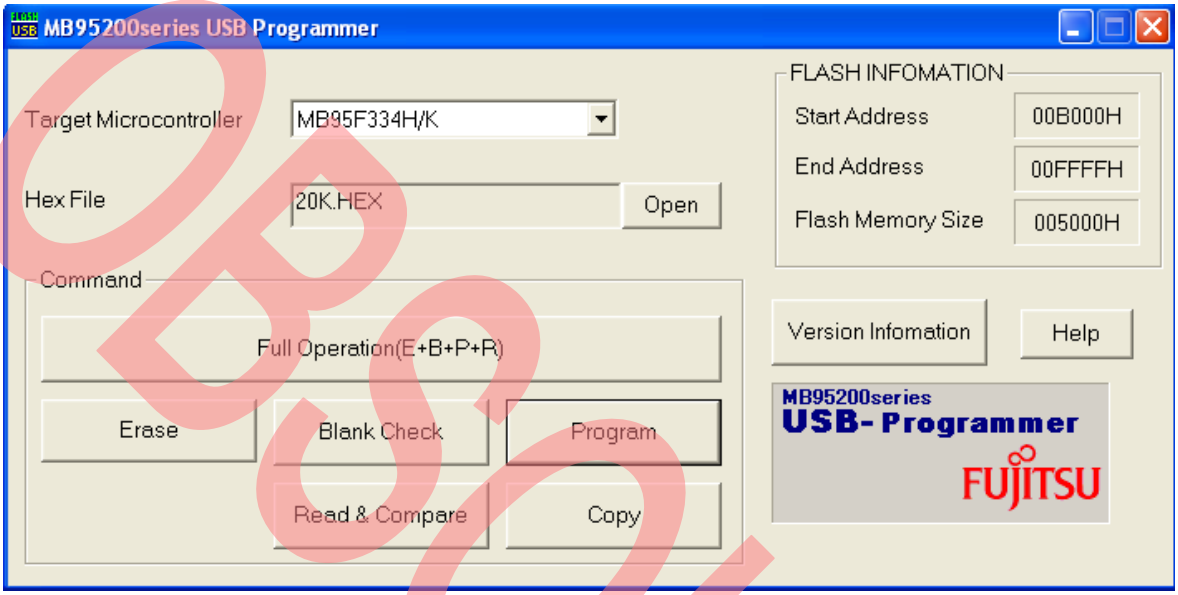
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2.4 USB Programmer

The MB95330 series USB programmer is as below picture. It can be downloaded from the following website.

www.cypress.com/8fx-mb95330

Figure 5. MB95330 Series USB Programmer



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3 Hardware Connection

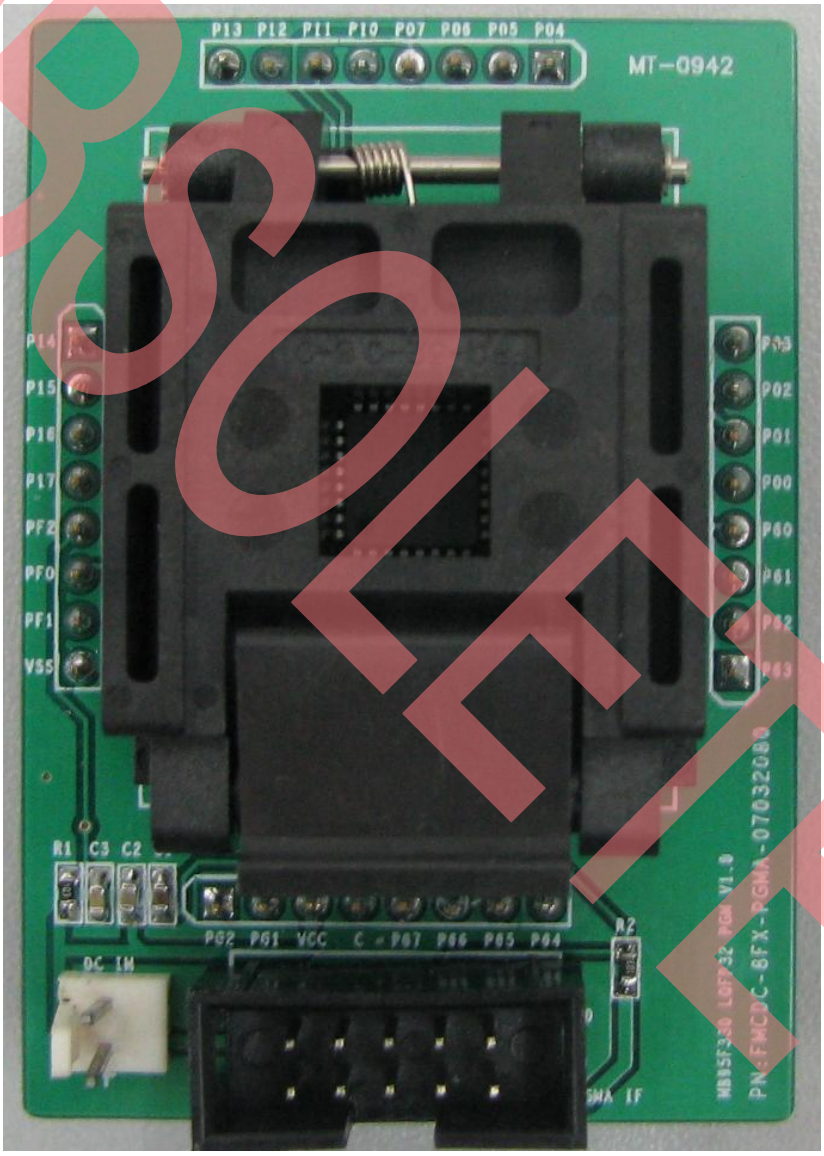
This chapter introduces hardware connection when it is used independently or with mother board.

MB95330 LQFP32 PGM adaptor can be used to program and debug independently or after being installed to the mother board. Hardware preparations for each case are described in Section 3.1and Section 3.2 respectively.

3.1 Independent Usage

When using MB95330 LQFP32 PGM adaptor independently for programming, we should fix MCU on the socket first. Then following steps should be implemented.

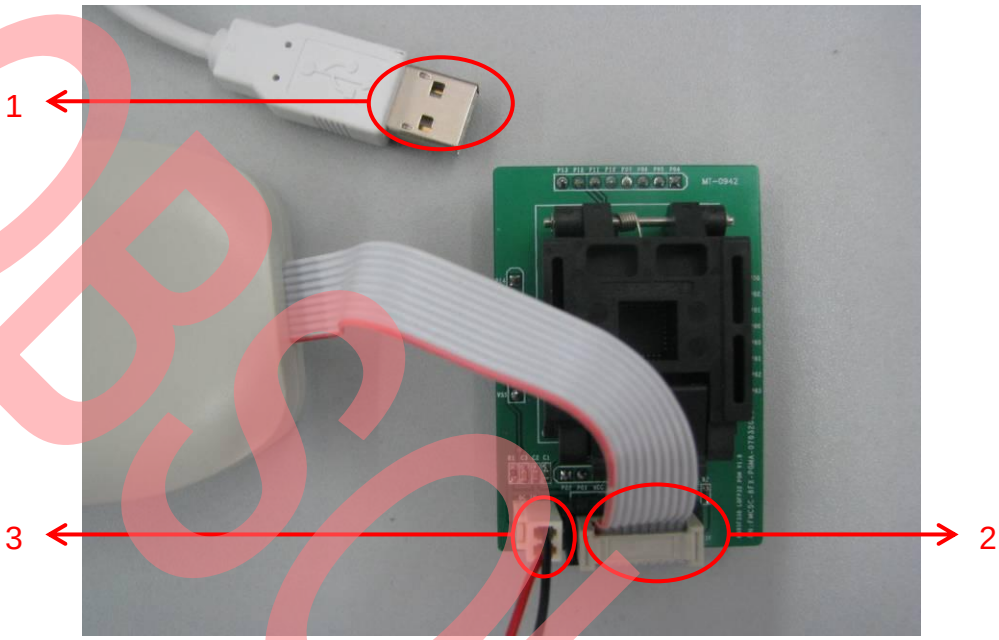
Figure 6. Independent Usage Preparation



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1. Connect BGMA to PC
2. Connect PGM adaptor board to BGMA
3. Power on the PGM adaptor board, the typical input voltage is 3.3V or 5V.

Figure 7. Hardware Connection for Independent Usage

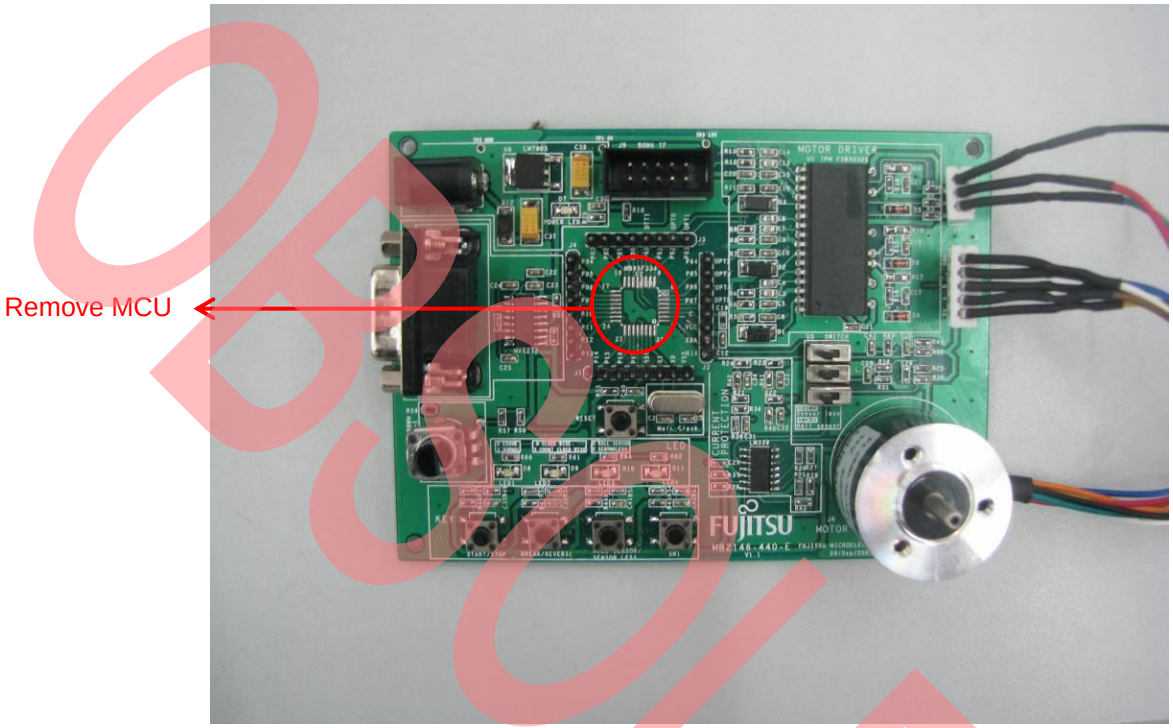


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3.2 Used with Mother Board

1. MB95330 series EV board V1.2 is the mother board of LQFP32 PGM adaptor board. First remove the MB95330 chip mounted on the mother board.

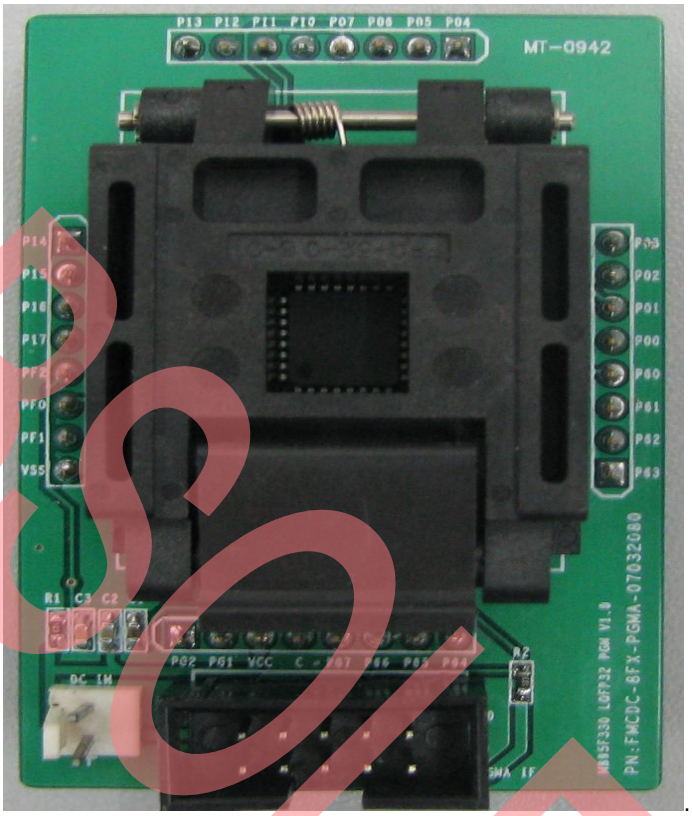
Figure 8. Remove MCU from Mother Board



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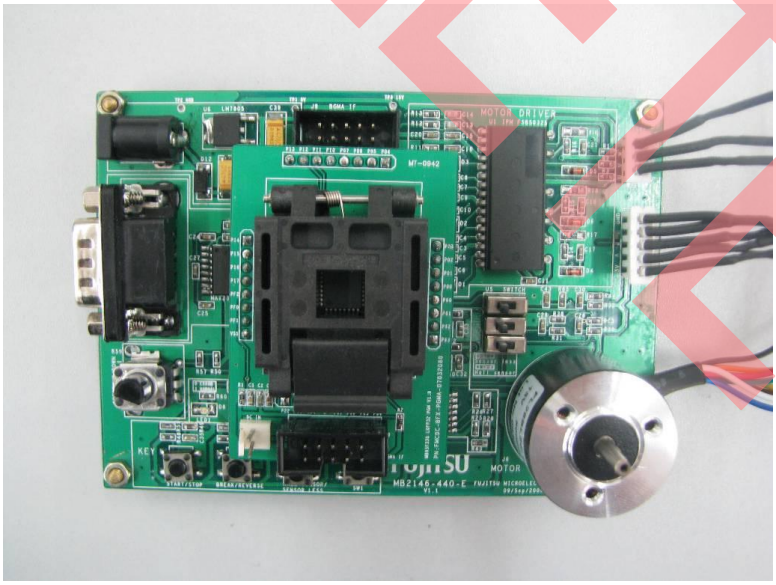
2. Install the MB95F330 chip onto the adaptor socket.

Figure 9. Place MCU on Adaptor Board



3. Fix the adaptor board to the mother board.

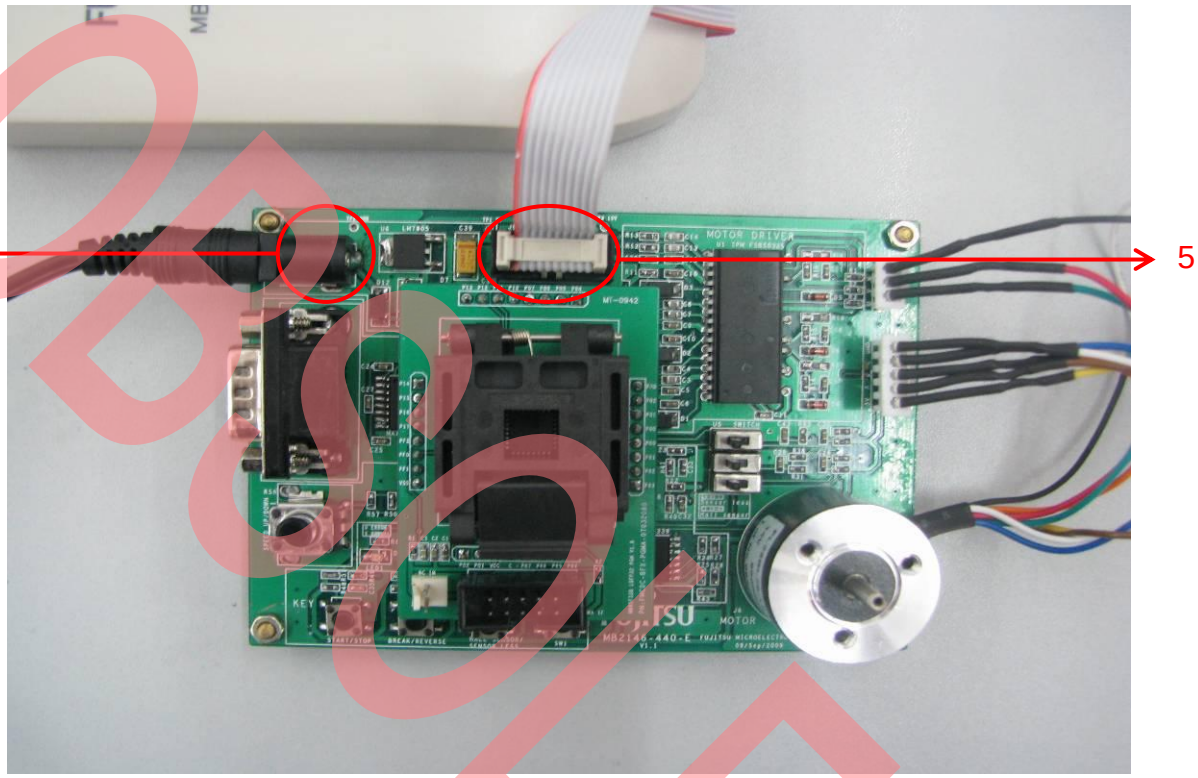
Figure 10. Fix Adaptor Board on the Mother Board



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4. Connect BGMA to PC.
5. Connect PGM adaptor board to BGMA.
6. Power on the EV-board.

Figure 11. Process 4-6



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4 Program Function

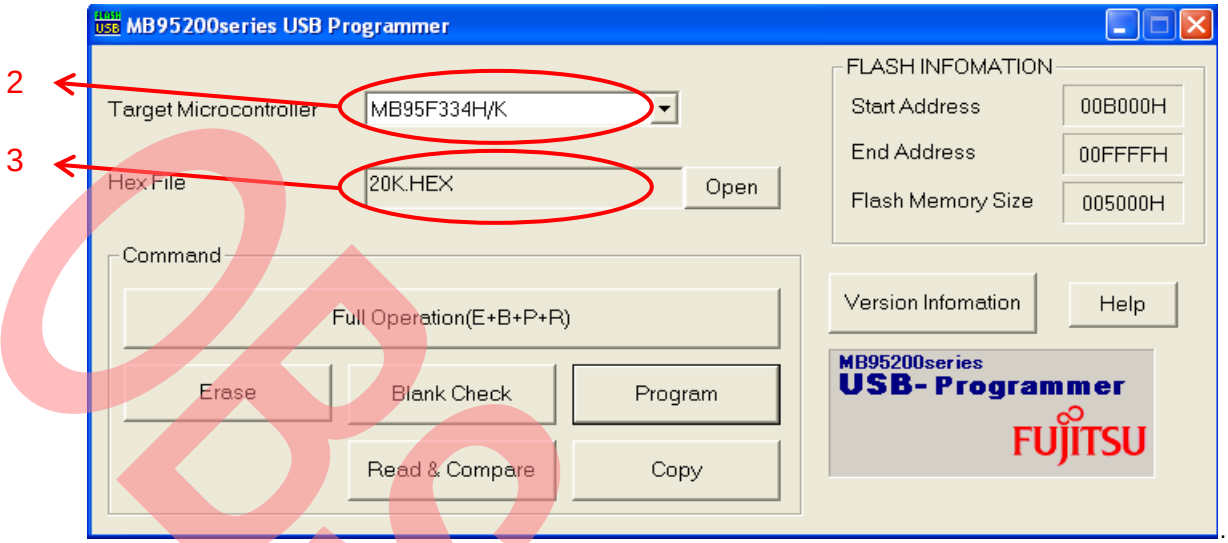
This chapter introduces programming steps using either MB95330 series USB programmer or F²MC-8L/8FX SOFTUNE Workbench V30L31.

MB95330 series MCU can be programmed through MB95330 series USB programmer or F²MC-8L/8FX SOFTUNE Workbench V30L31. Section 4.1 and section 4.2 introduce programming steps with MB95330 series USB programmer and F²MC-8L/8FX SOFTUNE Workbench V30L31 respectively.

4.1 Use MB95330 Series USB Programmer to Program

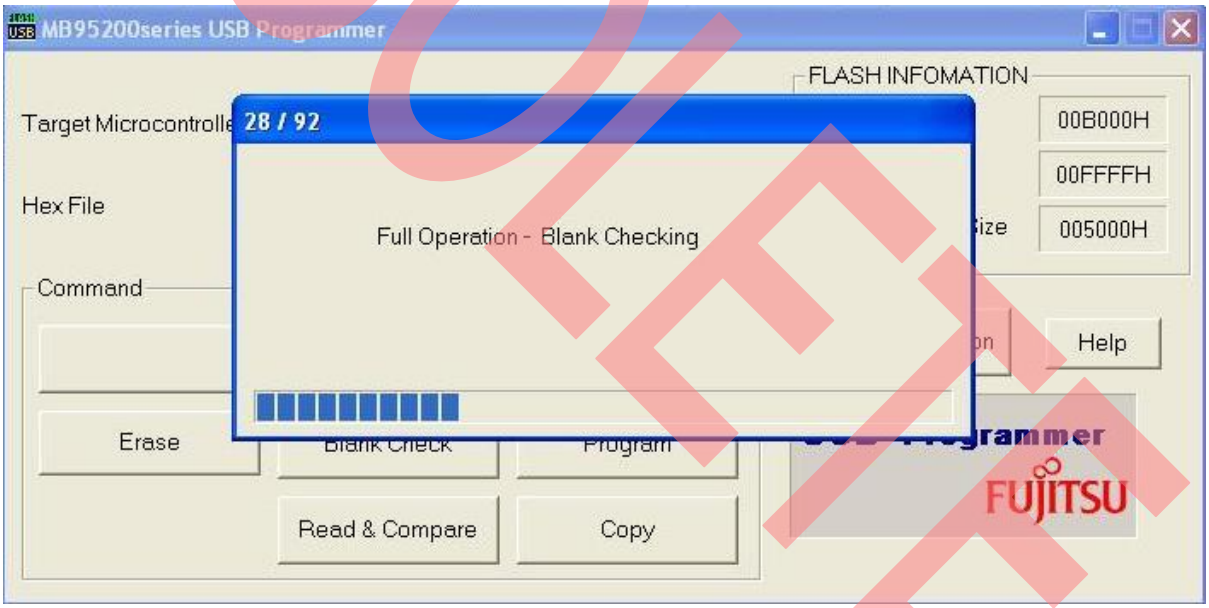
1. Open MB95330 series USB programmer.
2. Select MCU type (MB95334H/K).
3. Select Hex file by the path: Current project DIR\Debug\ABS.

Figure 12. Select MCU Type and Hex File



4. Click **Full Operation** to start programming.

Figure 13. Click Full Operation



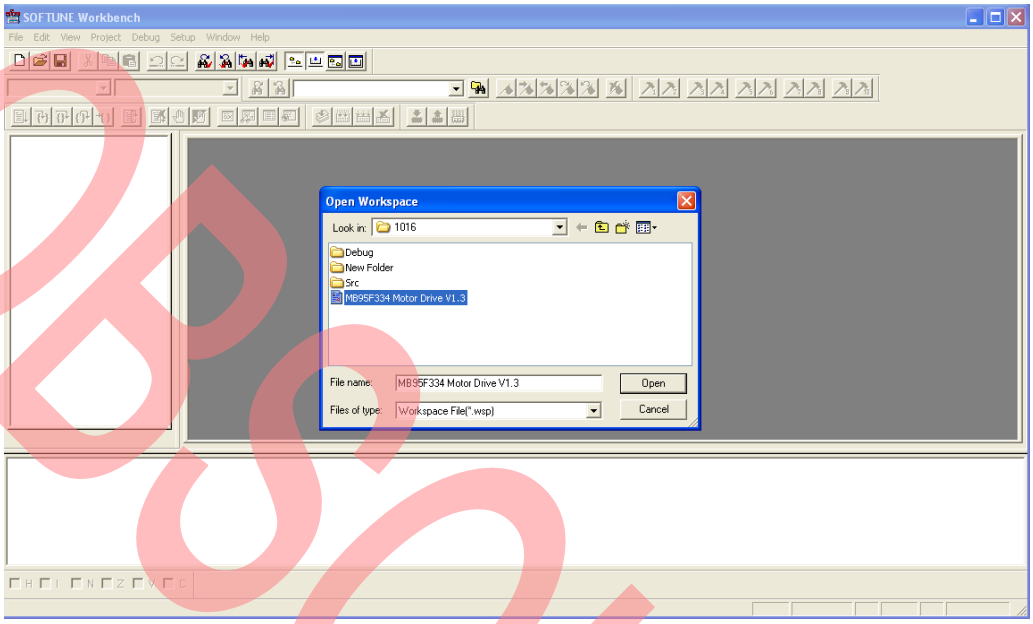
5. The USB programmer also provides single operation, including Erase, Blank Check, Program, Read & Compare and Copy.

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4.2 Use F²MC-8L/8FX SOFTUNE to Program

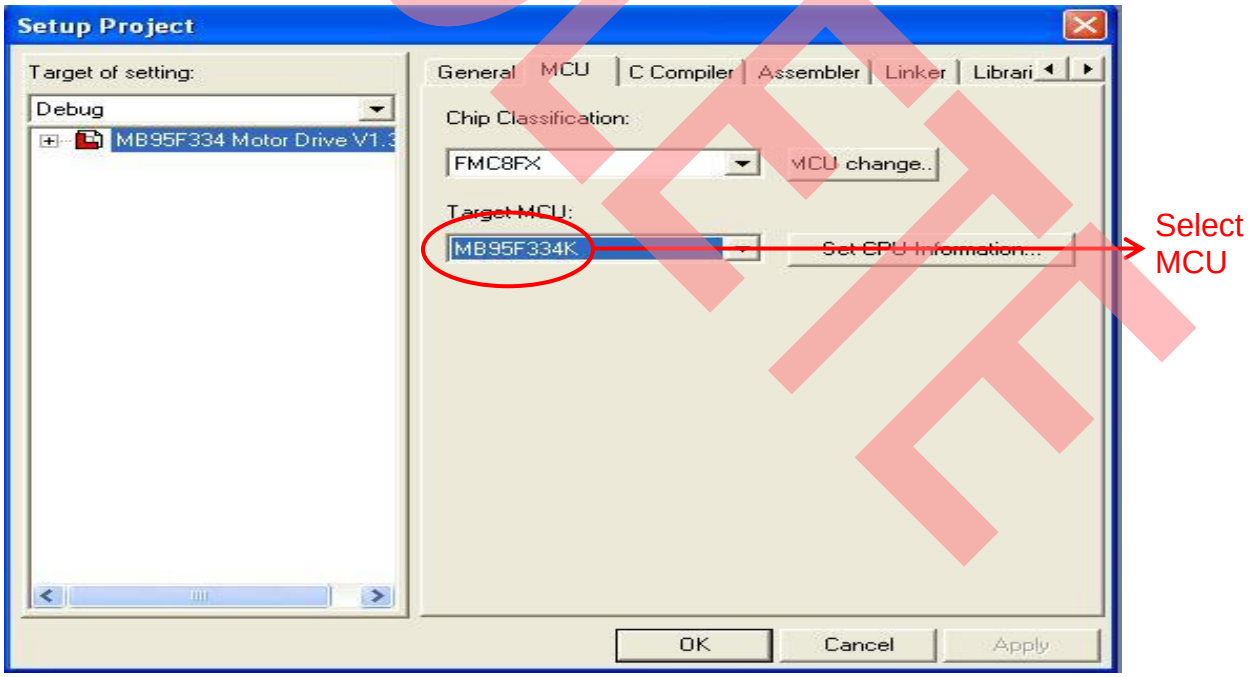
1. Open a project (E.g. MB95F334 Motor Drive) using SOFTUNE.

Figure 14. Open Demo Project



2. Please select the MCU type to MB95F334K in “Project/Setup Project…/MCU”.

Figure 15. Set MCU Type



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3. In “Project/Setup Project…/Linker”, set **Disposition/Connection** in **Category**, then select **_INROM01** and click **Set Section…**. After that, a dialog window will pop up as shown in Figure 17. Set Const (named @INIT) and Dirconst (named @DIRINIT) as shown in Figure 18 and Figure 19.

Figure 16. Disposition Display Window

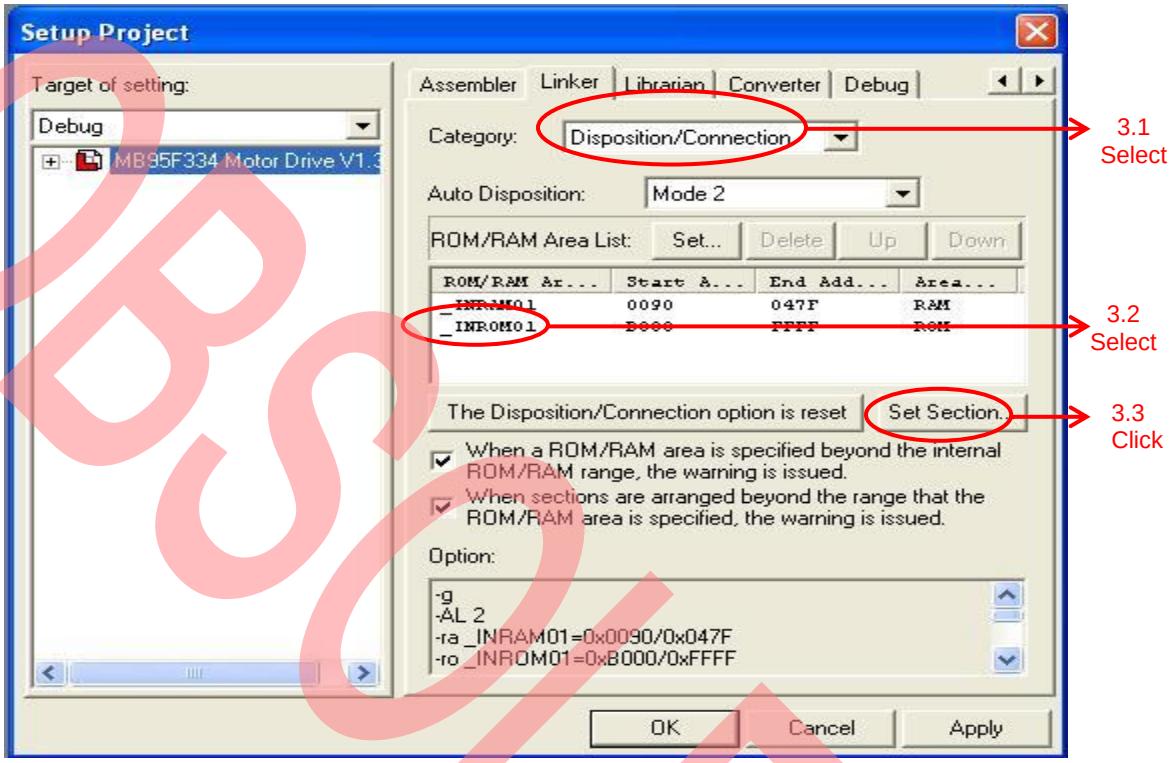
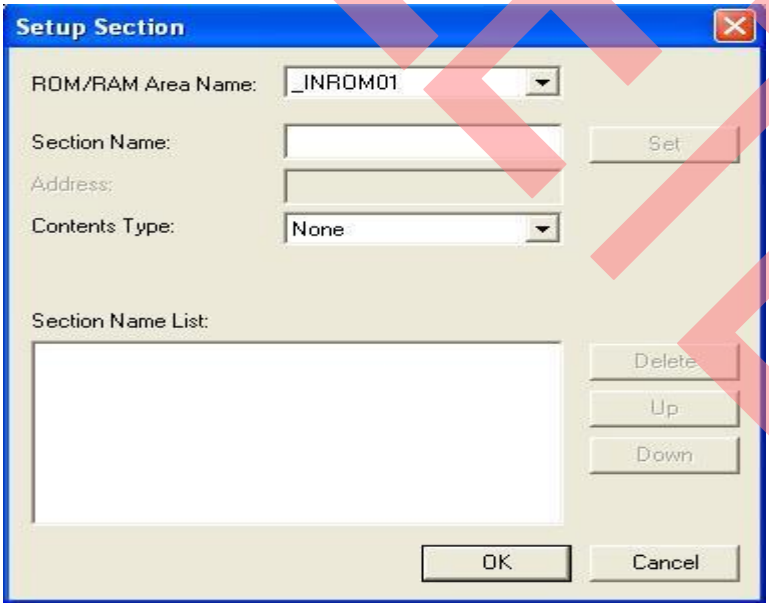


Figure 17. Section Setting Window



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Figure 18. Set Const Section

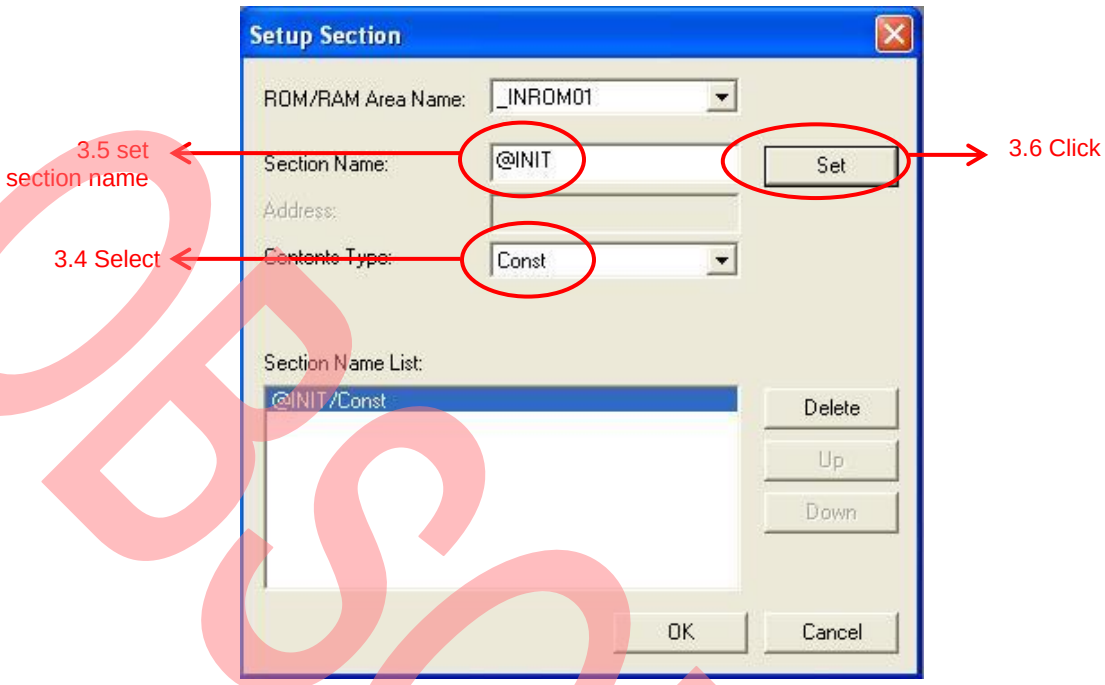
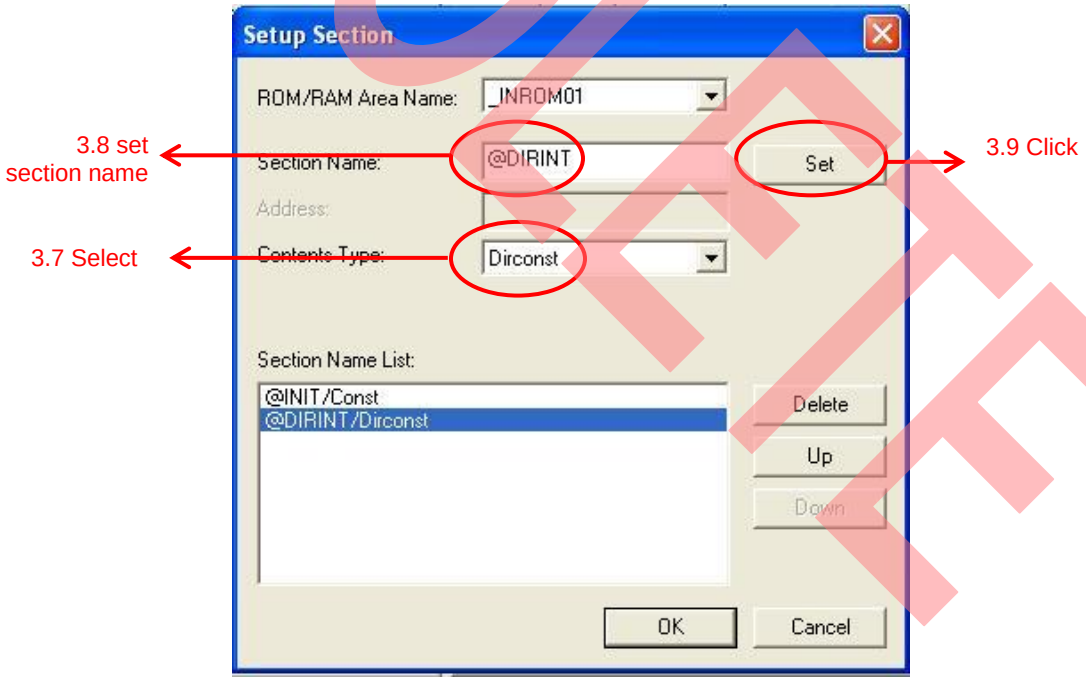


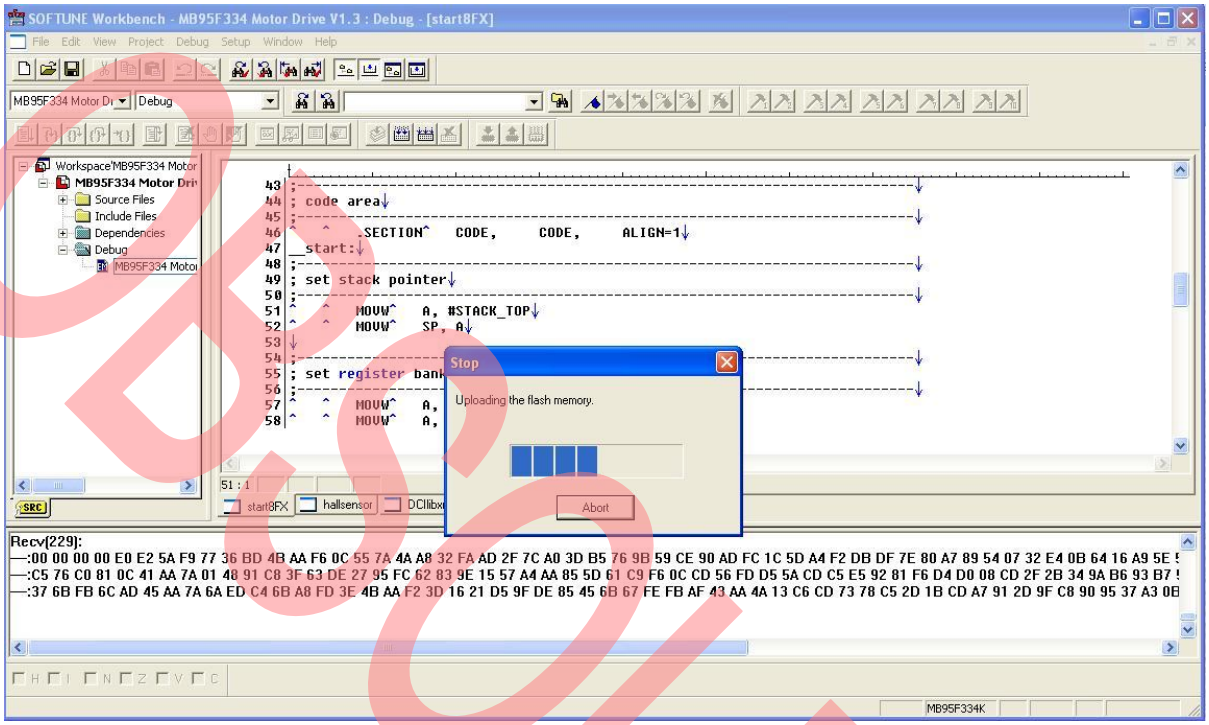
Figure 19. Set Dirconst Section



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4. Compile project.
5. Start debugging.

Figure 20. Start Debugging



6. Run (code update).
7. End debugging.

Note: SOFTUNE environment can also be used to debug, however if users only need to do programming, DO NOT set any breakpoint before step 6, or error code will be programmed.

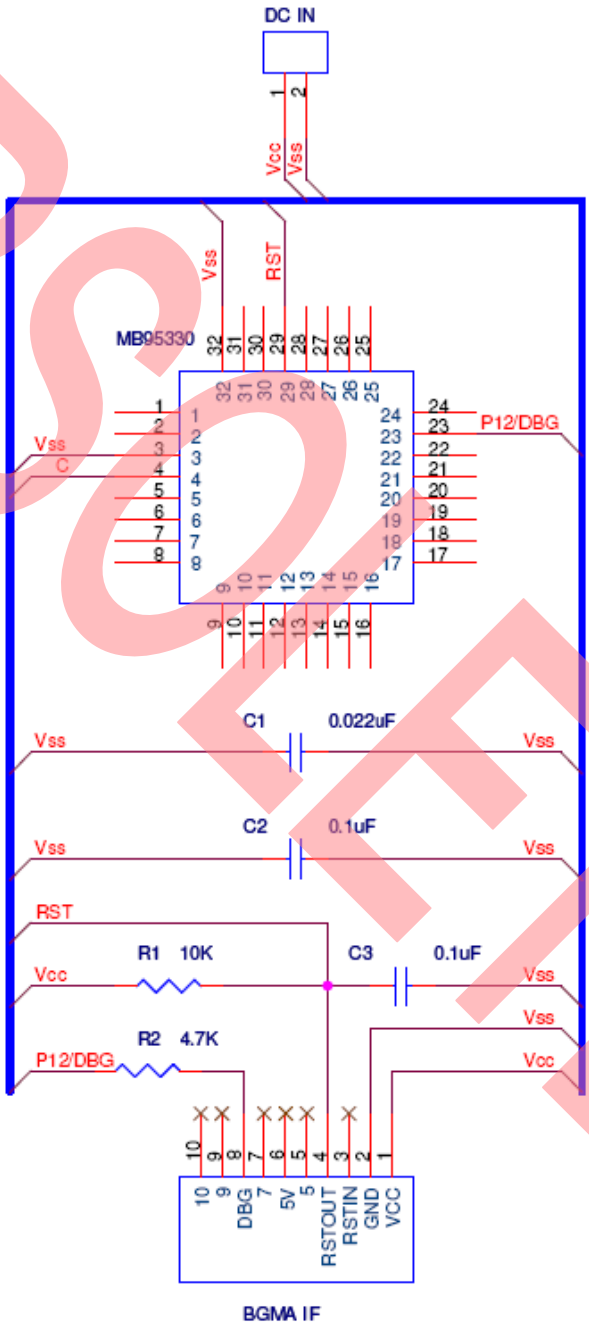
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5 Schematic

This chapter demonstrates schematic of MB95330 PGM adaptor.

5.1 LQFP32 PGM Adaptor

Figure 21. LQFP32 PGM Adaptor Schematic



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6 PN Definition Rule

The part number of PGM adaptor is FMCDC-8FX-PGMA-07032080.

07 →LQFP,

032 →Pin count (e.g. 032 means 32pin MCU),

080 →Lead pitch (e.g. 0.80mm means lead pitch 080).

7 PN List of Applicable MCUs

MCU Series	Part Number	Footprint
MB95330 series	MB95F332HPMC-G-SNE2 MB95F332KPMC-G-SNE2 MB95F333HPMC-G-SNE2 MB95F333KPMC-G-SNE2 MB95F334HPMC-G-SNE2 MB95F334KPMC-G-SNE2	LQFP32

8 More Information

For more information on Cypress MB95330 products, please visit the following website:

www.cypress.com/documentation/software-and-drivers/f2mc-8fx-mb95200-series-bgm-adapter-mb2146-08-e-operation-manual

www.cypress.com/documentation/application-notes/mb95330-programmer-adaptor-mb95330

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Document History

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Revision	ECN	Orig. of Change	Submission Date	Description of Change
**	—	HUAL	11/03/2009	Initial release.
			11/26/2009	Modified.
*A	5255526	HUAL	06/28/2016	Migrated Spansion Application Note from MCU-AN-500061-E-11 to Cypress format. Link to Hardware doesn't exist and this AN to be Obsolete.

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