AN204947

F²MC-8FX Family MB95310 Series LQFP80 PGM Adaptor

This application note describes about the MB95310 LQFP80 PGM adapter which is developed mainly as an independent on-board programming and debugging tool for MB95310 series LQFP80 package MCU. Its original function of programming and debugging after being installed on the MB95310 series EV board still remains.

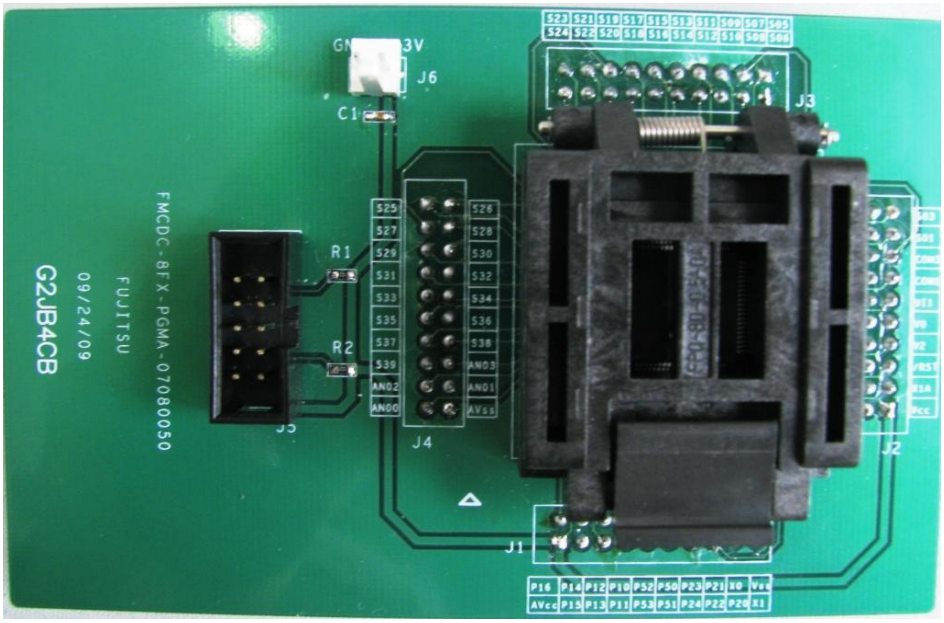
Contents

1 Introduction....1
2 Application Environment....2
2.1 Mother Board....2
2.2 Debug Tool....2
2.3 SOFTUNE....3
2.4 USB Programmer....3
3 Hardware Connection....4
3.1 Independent Usage....4
3.2 Used with Mother Board....6
4 Program Function....8
4.1 Use MB95310 Series USB Programmer to Program....8
4.2 Use F²MC-8L/8FX SOFTUNE to Program....9
5 Schematic....13
5.1 LQFP80 PGM Adaptor....13
6 PN Definition Rule....13
7 PN List of Applicable MCUs....14
Document History....15

1 Introduction

The MB95310 LQFP80 PGM adapter is developed mainly as an independent on-board programming and debugging tool for MB95310 series LQFP80 package MCU. Its original function of programming and debugging after being installed on the MB95310 series EV board still remains. The picture of MB95310 series LQFP80 PGM adaptor is shown in Figure 1. Four 20-pin connectors are used to connect with MB95310 EV board. The PN of the MB95310 LQFP80 PGM is FMCDC-8FX-PGMA-07080050.

Figure 1. MB95310 LQFP80 PGM Adaptor



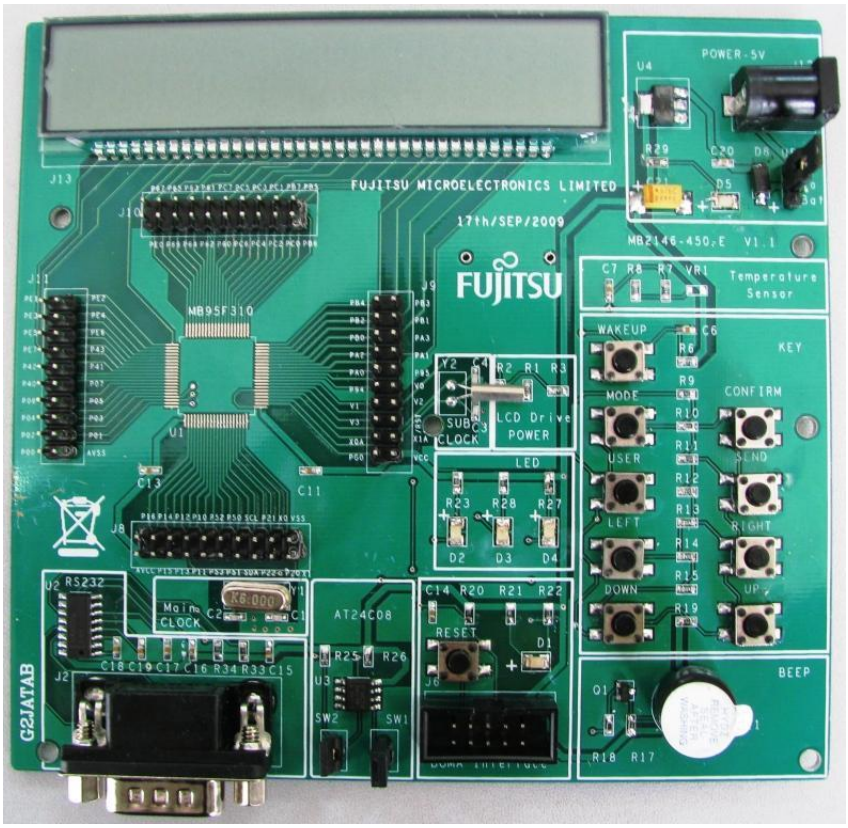
2 Application Environment

This chapter introduces application environment of MB95310 LQFP80 PGM adaptor.

2.1 Mother Board

The mother board of MB95310 LQFP80 PGM adaptor is MB95310 EV board V1.1, as below picture. It can be gotten from MB95310 LCD EV Board (PN: MB2146-450-E).

Figure 2. MB95310 EV Board V1.1



2.2 Debug Tool

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

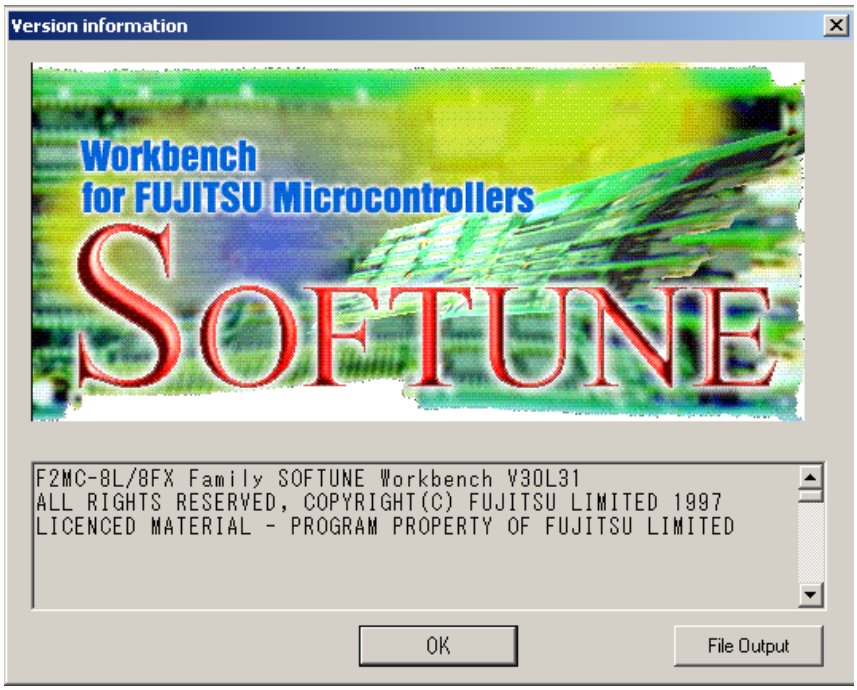
Figure 3. BGM Adaptor



2.3 SOFTUNE

SOFTUNE is used to program and debug, as software development environment. The version of it is F^{2}MC-8L/8FX SOFTUNE Workbench V30L31, as below picture. It can be downloaded from the following website.

Figure 4. SOFTUNE Version



2.4 USB Programmer

The MB95310 series USB programmer is not supported by far and will be updated later.

3 Hardware Connection

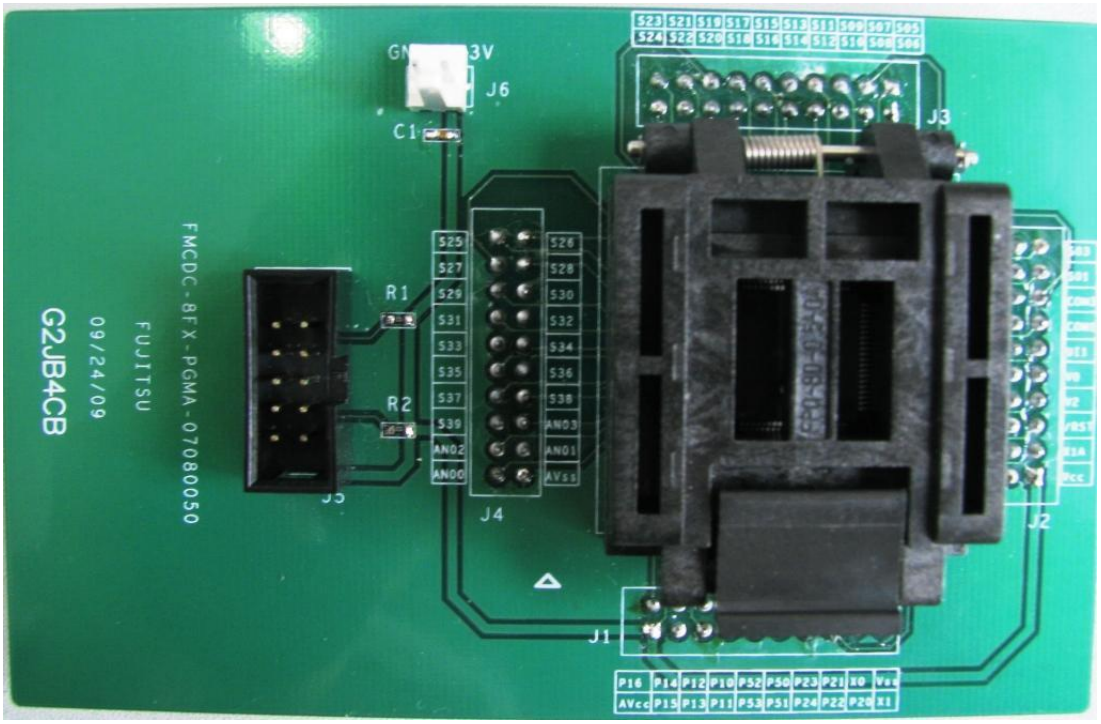
This chapter introduces hardware connection when it is used independently or with mother board.

MB95310 LQFP80 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 3.1 and Section 3.2 respectively.

3.1 Independent Usage

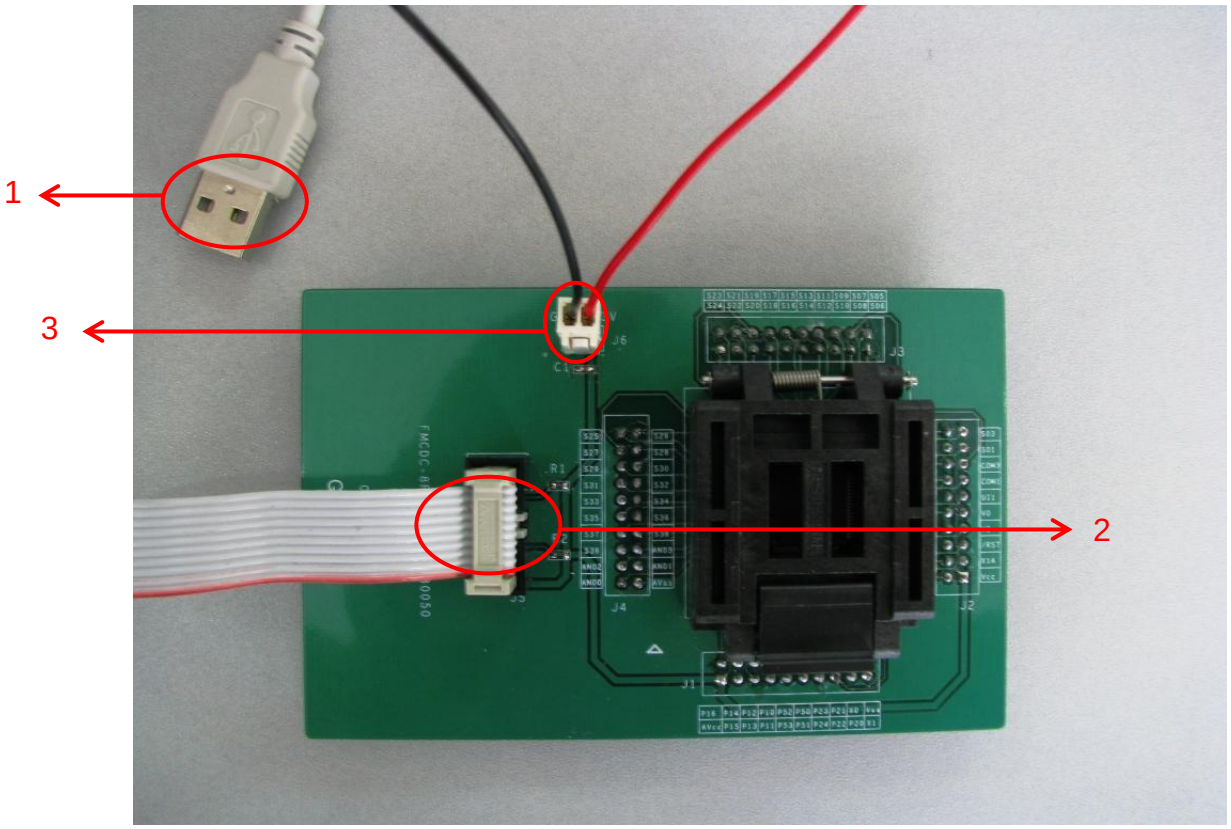
When using MB95310 LQFP80 PGM adaptor independently for programming, we should fix MCU on the socket first. Then following steps should be implemented.

Figure 5. Independent Usage Preparation



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.

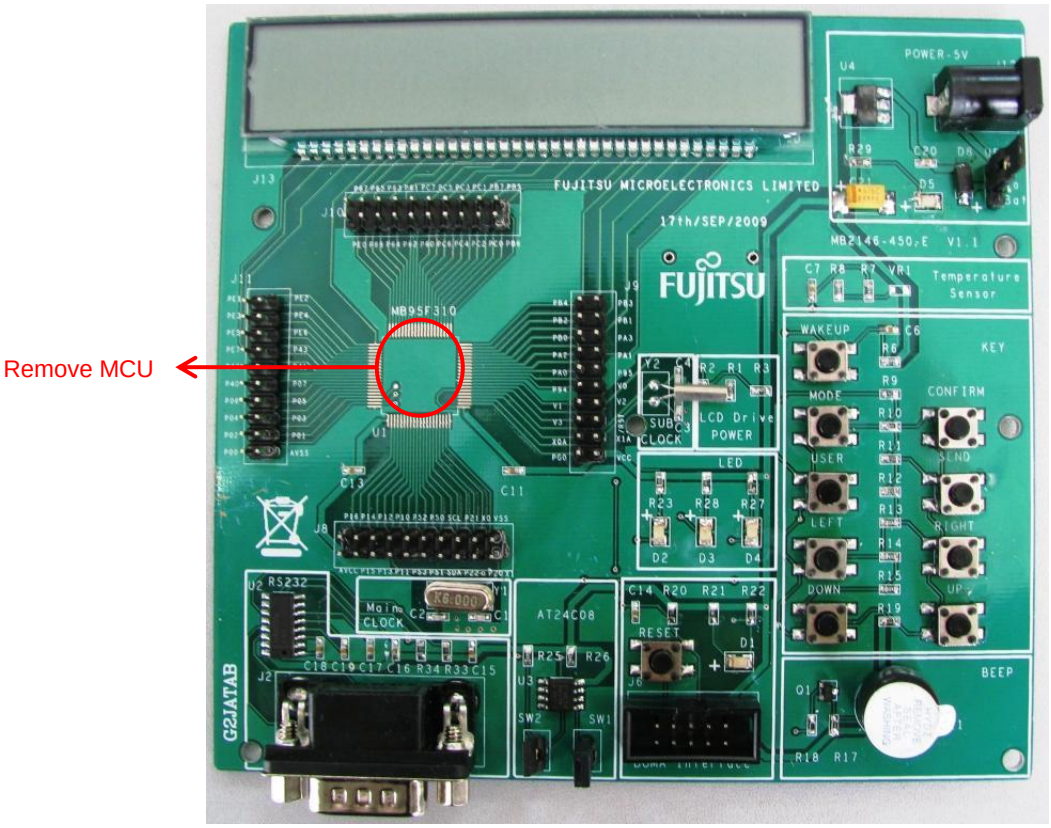
Figure 6. Hardware Connection for Independent Usage



3.2 Used with Mother Board

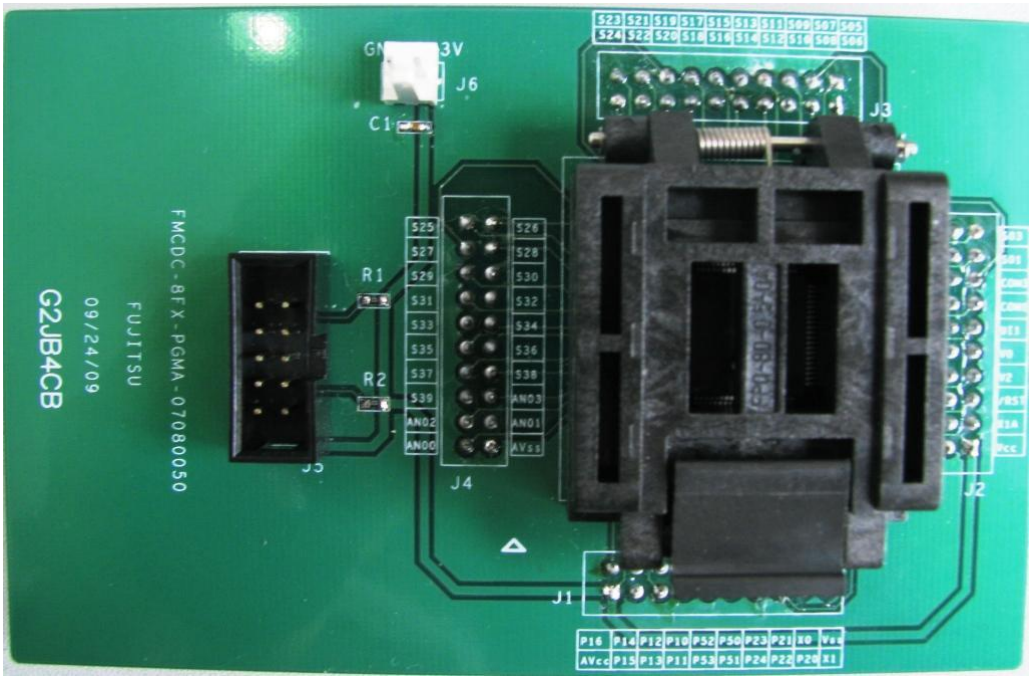
1. MB95310 series EV board V1.1 is the mother board of LQFP80 PGM adaptor board. First remove the MB95310 chip mounted on the mother board.

Figure 7. Remove MCU from Mother Board



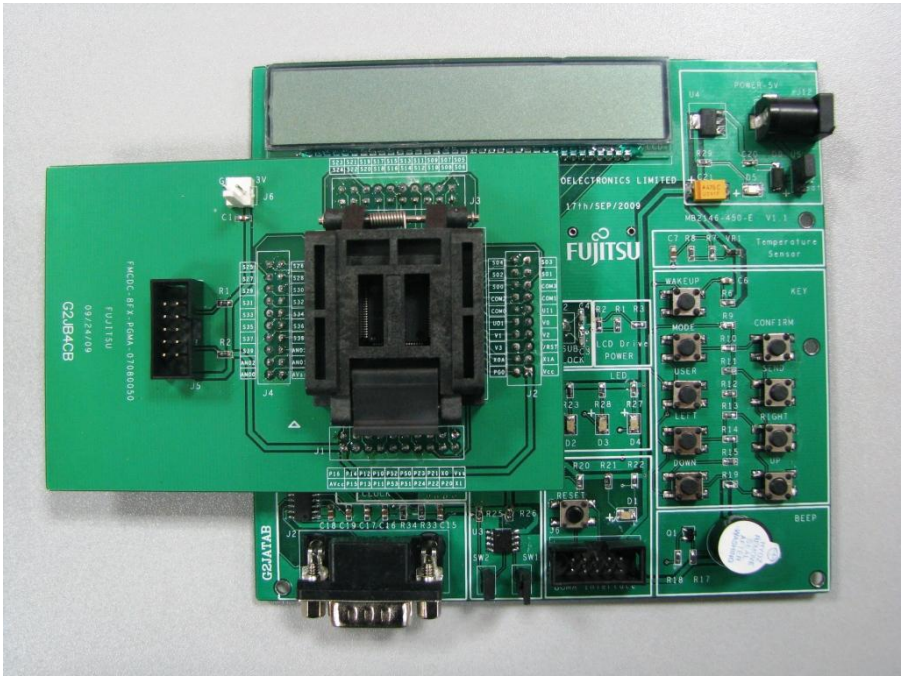
2. Install the MB95F310 chip onto the adaptor socket.

Figure 8. Place MCU on Adaptor Board



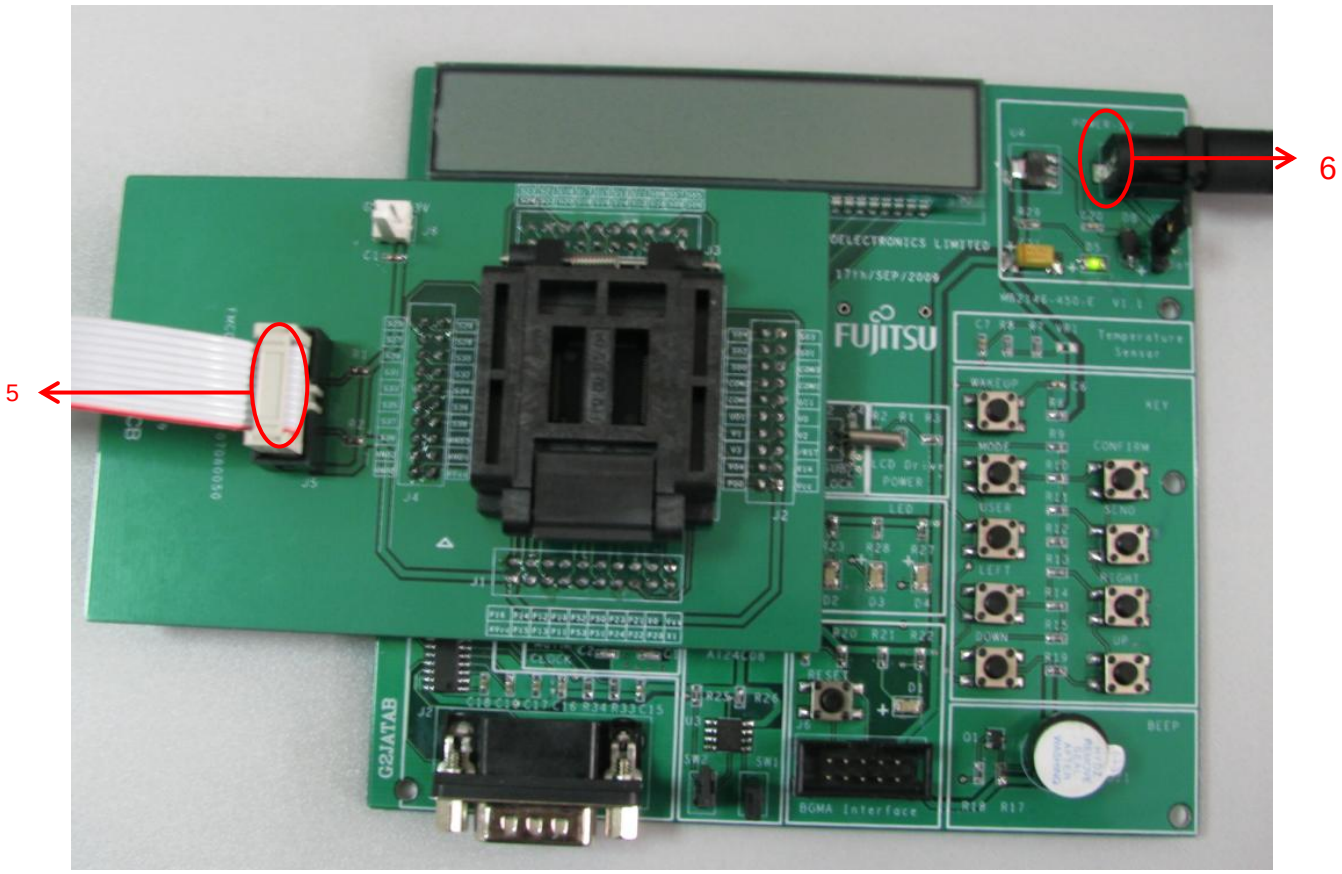
3. Fix the adaptor board to the mother board.

Figure 9. Fix Adaptor Board on the Mother Board



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

Figure 10. Process 4-6



4 Program Function

This chapter introduces programming steps using either MB95310 series USB programmer or F²MC-8L/8FX SOFTUNE Workbench V30L31.

MB95310 series MCU can be programmed through MB95310 series USB programmer or F²MC-8L/8FX SOFTUNE Workbench V30L31. Section 4.1 and section 4.2 introduce programming steps with MB95310 series USB programmer and F²MC-8L/8FX SOFTUNE Workbench V30L31 respectively.

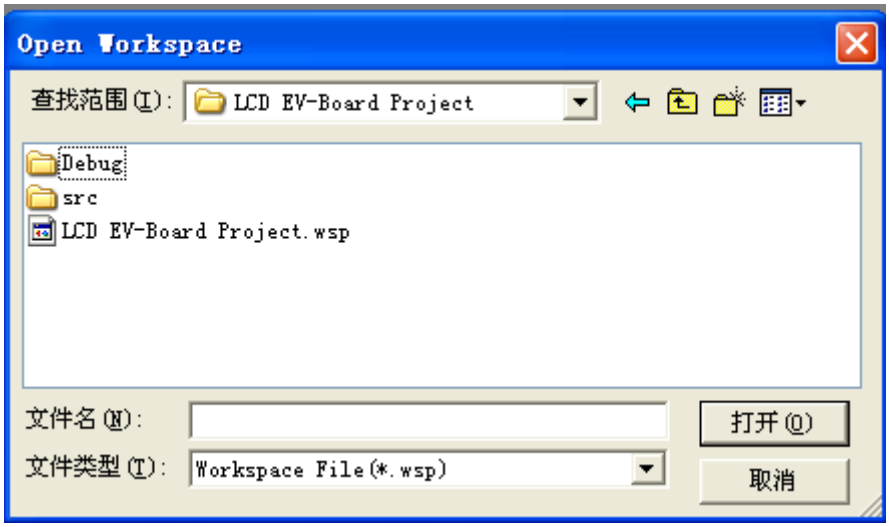
4.1 Use MB95310 Series USB Programmer to Program

This function is not support by far and will be updated later.

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

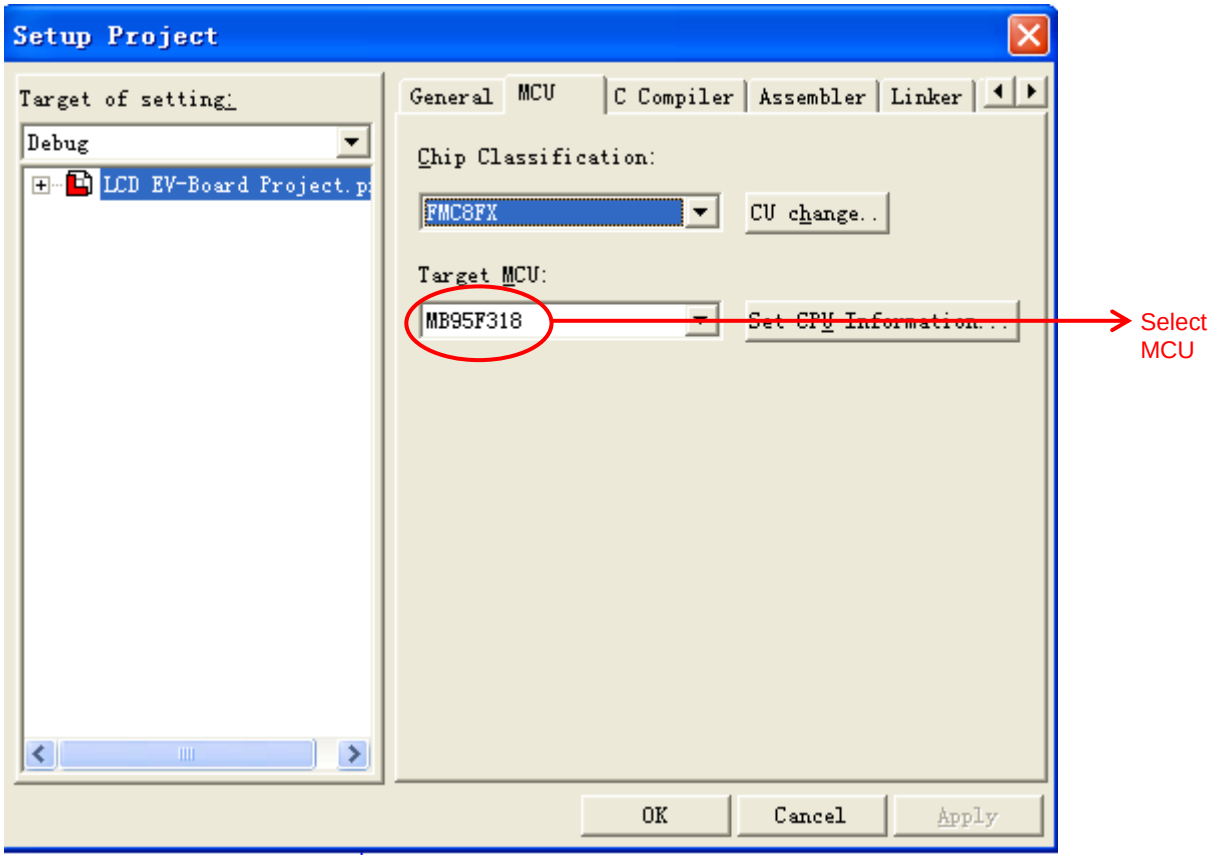
1. Open a project (E.g. MB95F310 LCD EV-Board project) using SOFTUNE.

Figure 11. Open Demo Project



2. Please select the MCU type to MB95F310 in “Project/Setup Project…/MCU”.

Figure 12. Set MCU Type



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 15 below. Set **Const (named @INIT)** and **Dirconst (named @DIRINIT)** as shown in Figure 16 and Figure 17.

Figure 13. Disposition Display Window

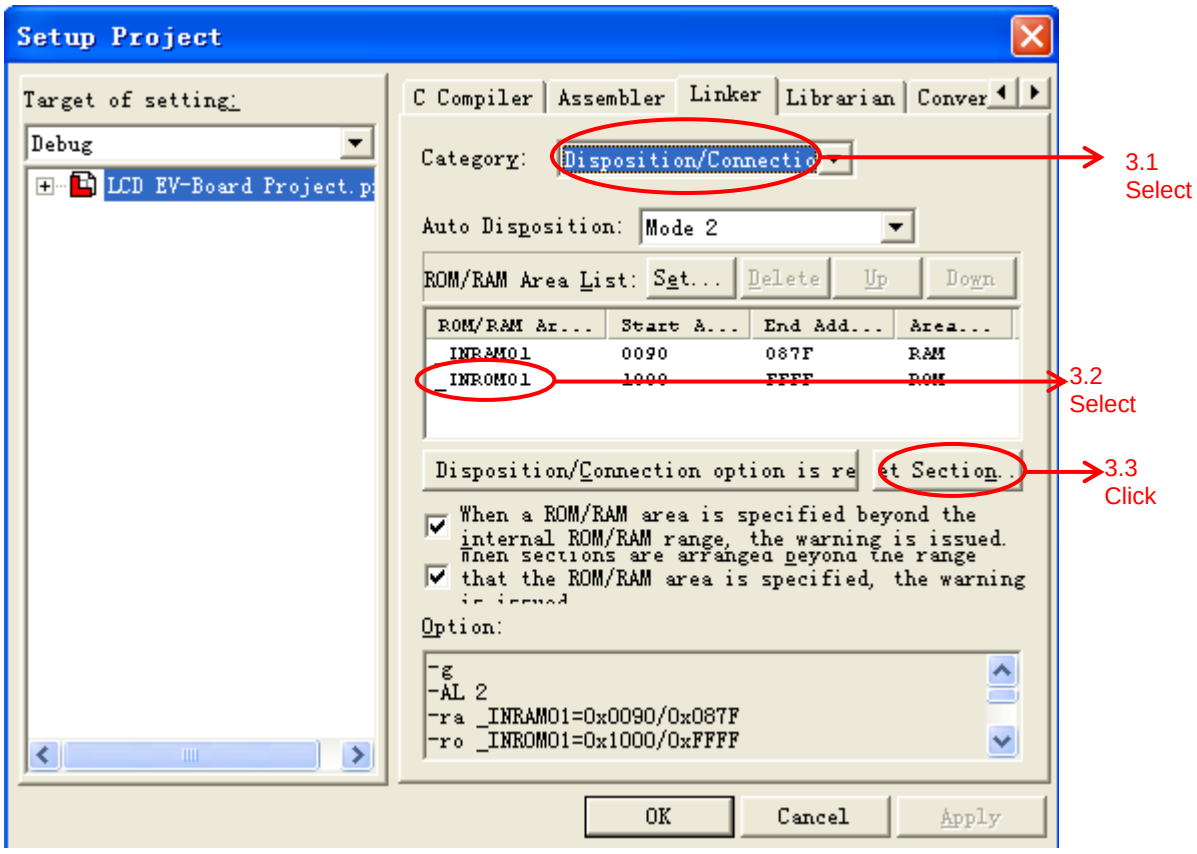


Figure 14. Section Setting Window

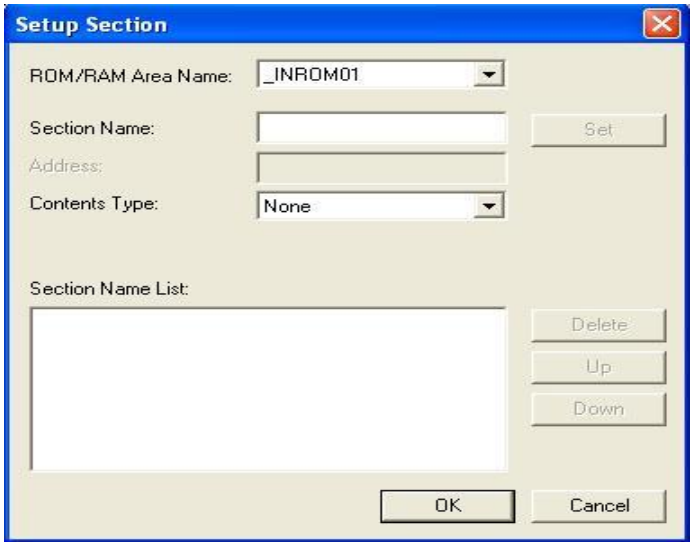


Figure 15. Set Const Section

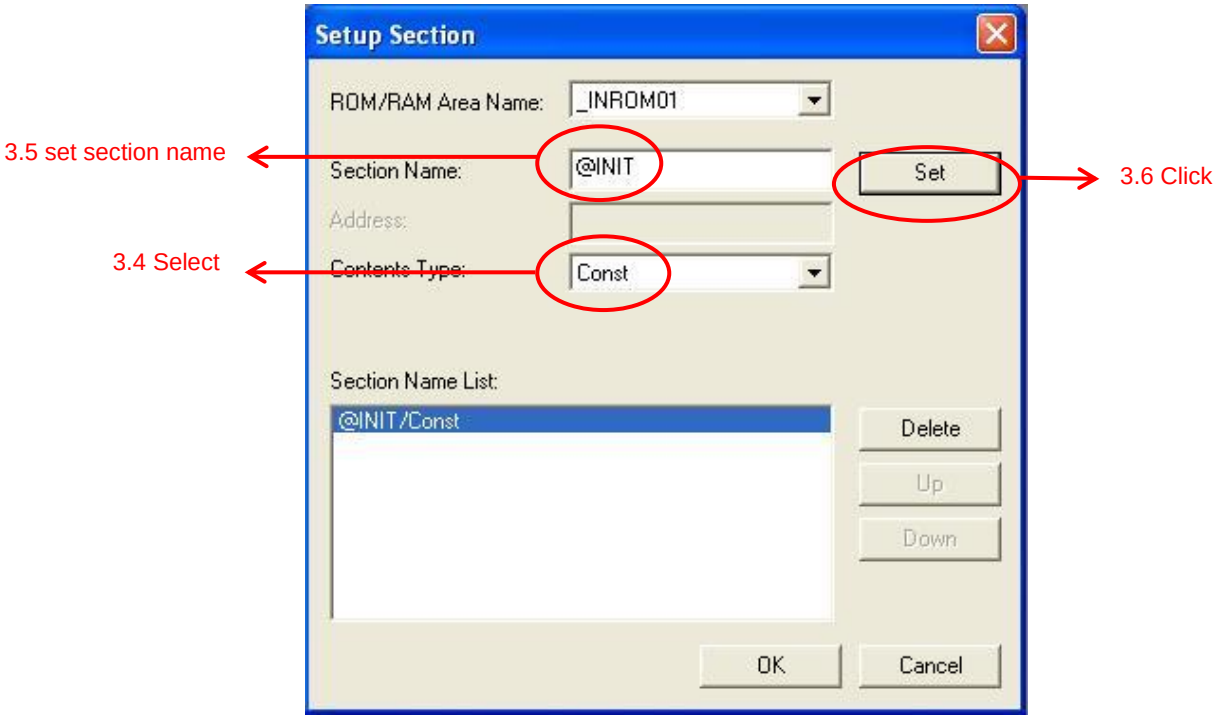
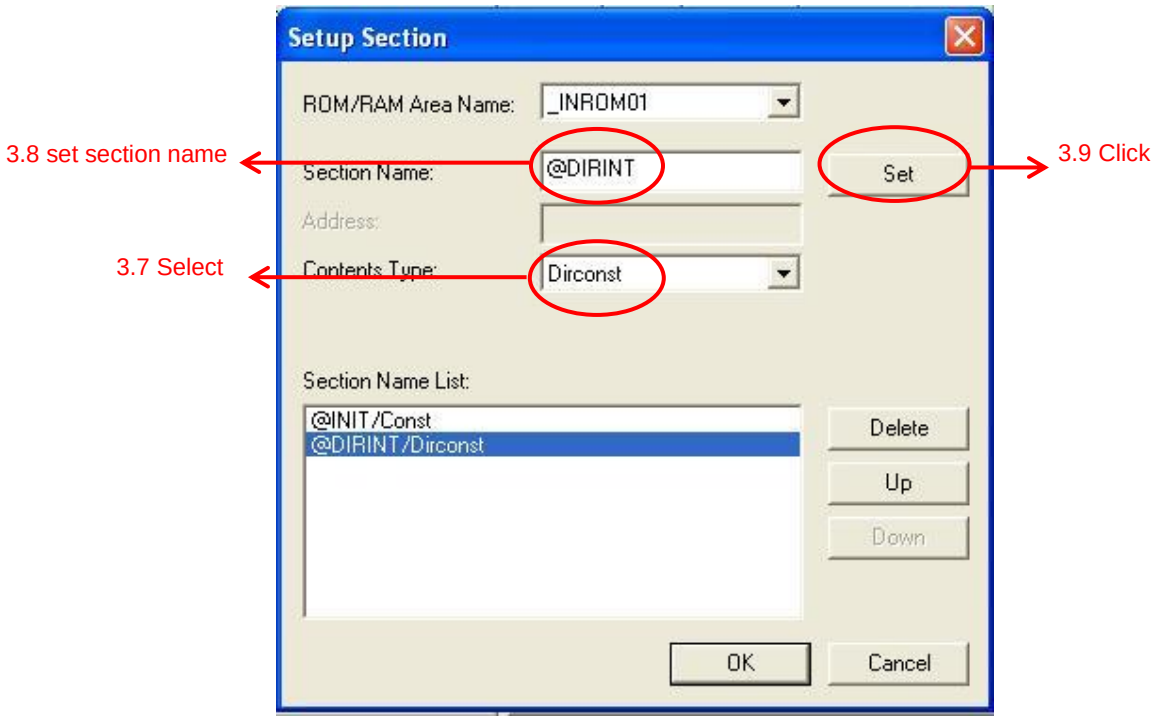
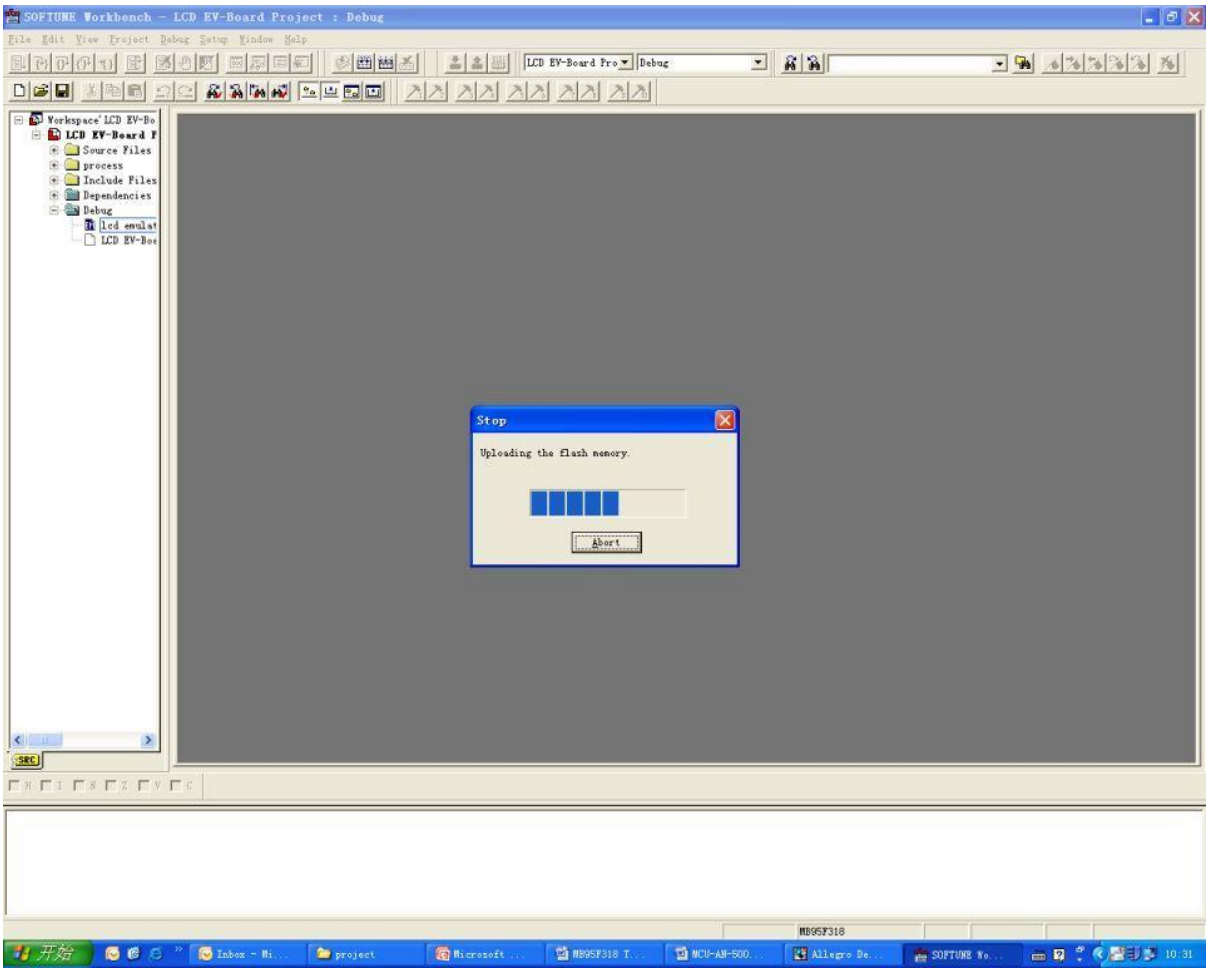


Figure 16. Set Dirconst Section



4. Compile project.
5. Start debugging.

Figure 17. Start Debugging



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

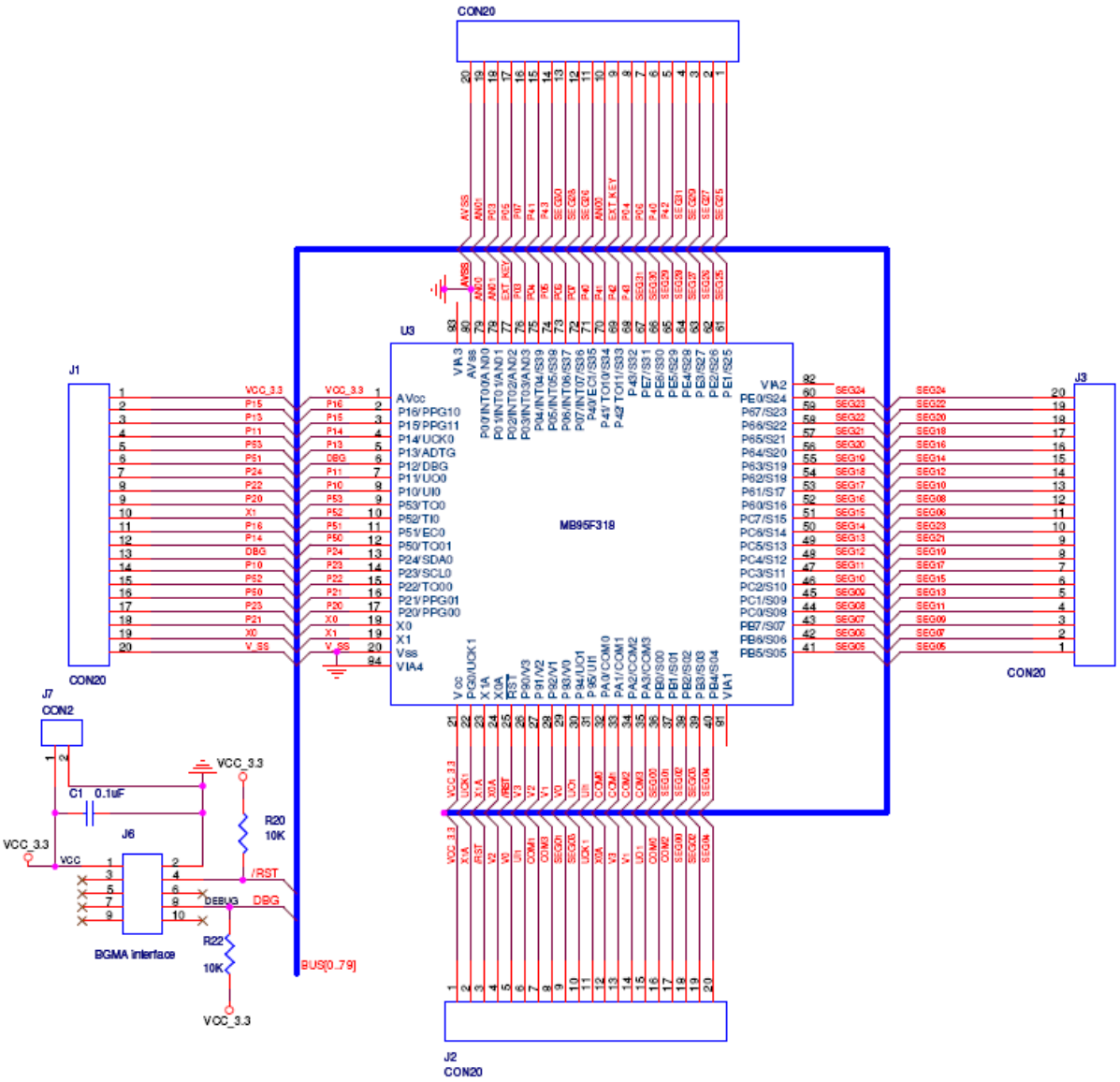
Note: SOFTUNE environment can also be used to debug, however if users only need to do programming, DO NOT set any breakpoint before step 6, or error code will be programmed.

5 Schematic

This chapter demonstrates schematic of MB95310 PGM adaptor.

5.1 LQFP80 PGM Adaptor

Figure 18. LQFP80 PGM Adaptor Schematic



6 PN Definition Rule

The part number of PGM adaptor is FMCDC-8FX-PGMA-07080050.

07 →LQFP

080 →Pin count (e.g. 080 means 80 pin MCU),

050 → Lead pitch (e.g. 0.50mm means lead pitch 050).

7 PN List of Applicable MCUs

MCU Series	Part Number	Footprint
MB95310 series	MB95F314E MB95F314L MB95F316E MB95F316L MB95F318E MB95F318L	LQFP80

Document History

Document Title: AN204947 - F²MC-8FX Family MB95310 Series LQFP80 PGM Adaptor

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Revision	ECN	Orig. of Change	Submission Date	Description of Change
**	—	HUAL	12/17/2009	Initial release.
*A	5256962	HUAL	09/15/2016	Migrated Spansion Application note from MCU-AN-500068-E-10 to Cypress format.
*B	5843346	AESATMP9	08/03/2017	Updated logo and copyright.

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