

FR FAMILY
32-BIT MICROCONTROLLER
MB91100

EMULATOR SETUP MB91100

APPLICATION NOTE

Revision History

Date	Issue
10.08.98	1.0 First draft
30.07.99	1.1 typos corrected
	1.2 typos corrected
12.11.02	1.3, MSt New format, changed to Starterkit91100

This document contains 14 pages.

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0 Introduction

The following explains the set-up of FR-series MB2197 Emulation system for MB91101 series.

1 What you'll need

The following components are necessary for this installation:

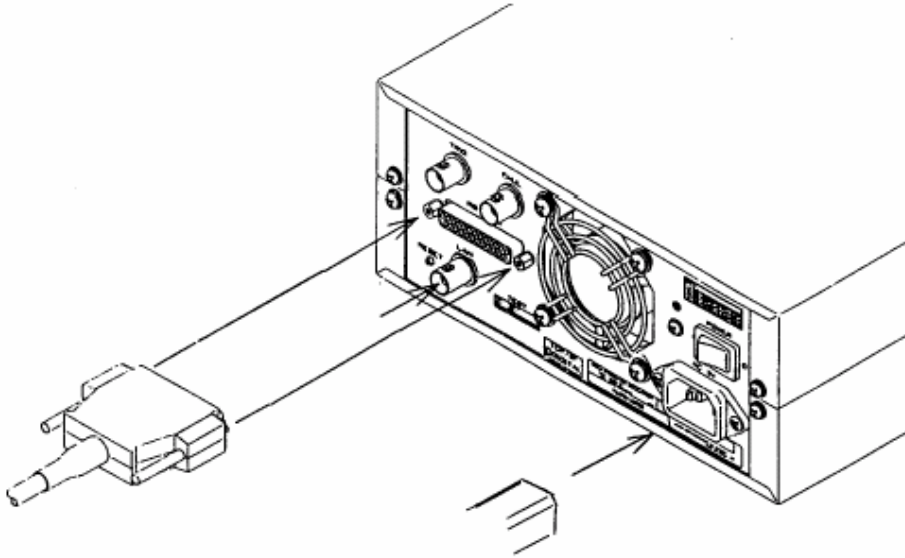
- MB2197-01 FR30 Emulator Main Unit
- MB2197-10 FR30 DSU-Cable (included in MB2197-01)
- MB91V101CR FR30 Eva-Chip BGA 135-pin
- StarterkitMB91100 with QFP-socket (remove mounted MB91F109)
- FR30-RAM-Stack-Board (FR-RAM-STACK1-100P-M06)
- RS232-Cable, 12.5MHz crystal, Power lead, Power supply for Starterkit91100
- IBM compatible PC with Windows 9x, Me, 2000/XP and a CD-ROM drive
- Fujitsu Micro CD-ROM V3 or higher

2 Hardware Installation

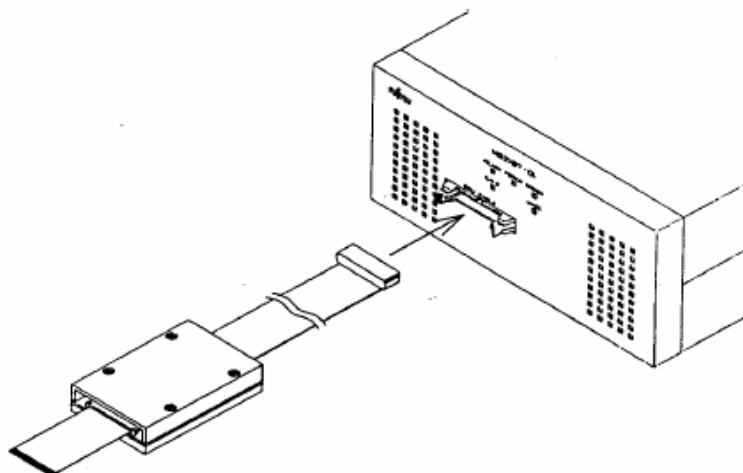
2.1 Emulator Set-up

This section describes the set-up procedure of the FR30 Emulator hardware:

- a) Main Unit: Connect the RS232-cable (DB25-side UMB2197-01; DB9 PC COM-port) and the power-cable (220V). For a LAN-connection (optional) refer to the manual.

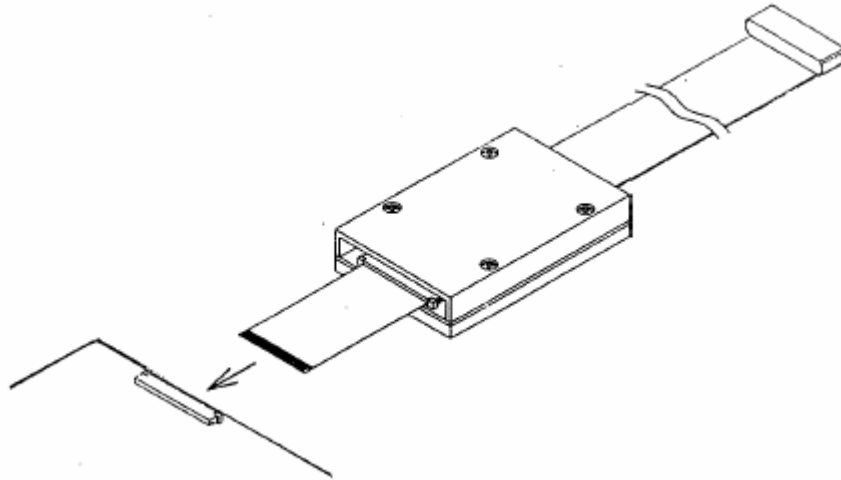


- b) DSU (Debug Support Unit) : Insert the blue connector towards the main unit and secure the clips.



c) Connect DSU to Target System:

Open the DSU connector on both sides, insert the flat cable (gold contacts upwards) and close the connector tightly.



2.2 Target system set-up

This section shows how to setup the hardware of the FR-RAM-STACK-Board, the Starterkit91100 and the FR-in-circuit emulator.

- a) Open the QFP-100 Socket of the Starterkit9100 carefully using a screwdriver and remove the MB91F109PF.
- b) Place the lower board of the FR-RAM-Stack-Board onto the QFP100 socket of the Starterkit91100 and fix it in the right orientation using the provided screws, as it is shown below. The pin numbers are also indicated on the lower RAM-Stack-Board.

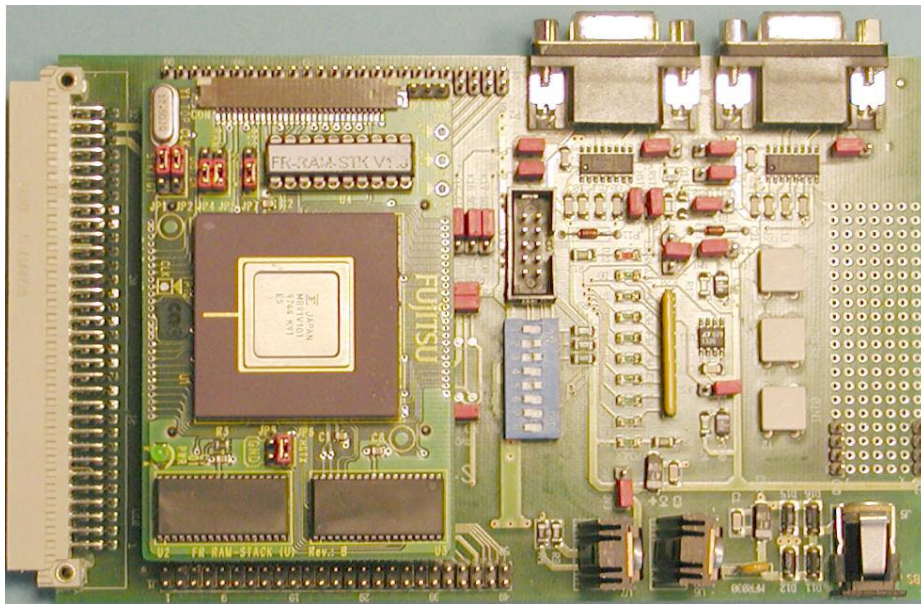


Figure 1: Stack orientation in Starterkit91100

NOTE: There are two different sockets types available. If you use the socket with the two centre screws, be sure to use the right screws (M2.5 total length=12mm). QFP-Sockets with the corner-screws will need four M2 screws, total length=11mm (included in FR-RAM-STACK1-M06).

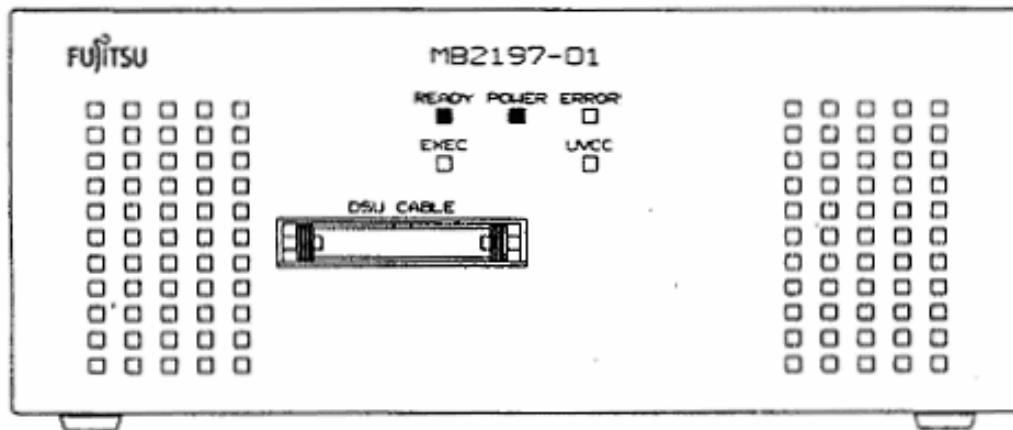
- c) Insert the evaluation chip MBV91101 (BGA 135-pin type) in the socket of the upper FR-RAM-Stack and put it on top of the lower board.. After that, insert the upper part of the stack carefully on top of the lower part, which is already fixed on the board.

The target system is now prepared to be connected to the emulator debugging unit.

NOTE: If you intend to remove the Stack from the Starterkit91100 later on, DO NOT simply pull on the upper FR-RAM-Stack, you might damage the QFP-socket on the Starterkit91100. Use tools, e.g. screwdriver or pliers, to hold the lower FR-RAM-Stack down and to overcome the connector insertion force.

3 Hardware Initialisation

- a) Turn on the Main Unit (MB2197-01), then power up the target system (be sure the AC adapter is set to 7.5 V and + is on the shield \bar{U} see manual of Starterkit91100). After powering up the target system, always press the blue “user” reset-button on the Starterkit91100 to make sure the SRAM’s are accessible. On the Main Unit, “Power” and “Ready” should light up now:



- b) Select “Monitor Loader” from the Start-menu. Select the “20DSU2.HEX”-monitor file (library directory) and click on Start to download the file to the MB2197-01. Note: This has to be done only once.
- c) The Emulator System is now ready to use. Execute “Softune Workbench” and load an object file (e.g. C:\Softune\Sample\FR30Demo\FR30Demo.ABS) to test the system.

Once the system is installed, use the described power-up sequence (a) any time the system is being used. The settings described in (b) and (c) need not to be executed every time.

4 Software Installation

Install „Softune Workbench for FR“ from the CD-ROM. After executing Setup.exe you will find a menu with install-options. Select all items and start the installation. The default-path will be C:\Softune.

After the installation you will find Softune Workbench ready to use for the MB91101 series.

Also, a demo-project and some additional Starterkit tools can be installed.

5 Trouble Shooting

Problem	Solution
<p>“Communication Error” occurs while trying to: ...start the emulator software ...download the monitor-file</p>	<p>Check the RS232-Connections :</p> <ul style="list-style-type: none"> ▪ Is the COM-port set correctly (Note: 0=COM1, 1=COM2 etc.)? Are the two plugs inserted correctly? Be sure that no other program on your PC uses the Com-port you selected! ▪ Press the Reset-Button on the back of the MB2197-01 or restart the entire system (see 4a, b ,c). ▪ Check the QFP-adapter stack! If the lower part is not set correctly into the socket, this can cause problems which lead to a communication error message!
<p>“Verify Error at xxxxxx” occurs while trying to download a program to the target system</p>	<p>The evaluation Chip could not write data or code in the region which was specified in the ABS-file !</p> <ul style="list-style-type: none"> ▪ If you use the Starterkit, press the blue “user” reset button to make sure the RAMs are available
<p>“Invalid install file” occurs while trying to start the emulator software</p>	<p>The install file “.INS” could not be found.</p> <ul style="list-style-type: none"> ▪ See 4b to create this file, also check the location (should be in FETOOL\BIN)
<p>“Invalid emulator monitor program” occurs while trying to start the emulator software</p>	<p>The settings in the “.INS”-file are incorrect</p> <ul style="list-style-type: none"> ▪ Review section 4

For other error messages, please refer to the FR30 Emulator Debugger Manual. The documentation for the emulator system is included on the CD-ROM.

6 Information in the WWW

Information about FUJITSU MICROELECTRONICS EUROPE Products can be found on the following Internet pages:

Microcontrollers (8-, 16- and 32bit), Graphics Controllers
Datasheets and Hardware Manuals, Support Tools (Hard- and Software)

<http://www.fme.gsdc.de/gsdc.htm>

Memory products: Flash, SDRAM and FRAM

<http://www.fme.fujitsu.com/products/memory/index1.html>

Linear Products: Power Management, A/D and D/A Converters

<http://www.fme.fujitsu.com/products/linear/start.html>

Media Products: SAW filters, acoustic resonators and VCOs

<http://www.fme.fujitsu.com/products/media/index1.html>

For more information about FUJITSU MICROELECTRONICS

<http://www.fme.fujitsu.com/products/start.html>

7 Appendix

7.1 Available Documentation

- FR30 MB91101 Hardware Manual (CM71-10102-2E)
- FR30 MB91101 Datasheet (DS07-16301-3E)
- Softune Workbench User Guide (CM81-00306-4E)
- Softune Workbench Operation Manual (CM81-00305-4E)
- Softune Workbench Command Reference Manual (CM81-00307-4E)
- C-Compiler Manual (CM81-00204-1E)
- Embedded-C Programming Manual (CM71-00324-1E)
- FR Assembler Manual (CM81-00201-4E)
- FR Instruction Manual (CM71-00101-2E)
- FR20 MB91100 Linkage Kit Manual (CM81-00302-3E)
- Starterkit91100 User Guide
- FR30-RAM-Stack-Board User Guide (FR-RAM-STACK1-100P-M06)

7.2 Figures

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