Application Note

Emulator Setup Instructions for MB91360

History

13th Oct. 99	MM	V1.0	New Format, new updated version
04th Jul. 00	MEN	V1.1	Updated Application

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This manual shows how to setup the FR-Emulator system for the MB91360 series. Follow these instructions step by step in order to install both hardware and software components of the entire system properly. As a target system example, the MB91360-Starterkit is used.

1. What you'll need

The following components are nessesary for this installation :

- ✓ Emulator Main Unit MB2197-01 (including DSU-cable)
- ✓ Emulation Adapter Board MB2197-120
- ✓ Header Board MB2197-127
- ✓ Evaluation Chip MB91V360
- ✓ Ribbon cables for Header Board connection
- ✓ Separated 5V power supply for Emualtion Adapter Board
- ✓ Targetsystem with NQPACK208-socket (e.g. MB91360 Starterkit)
- ✓ PC (Win95, Win98 or NT) with at least one free COM-port
- ✓ Software CD-ROM

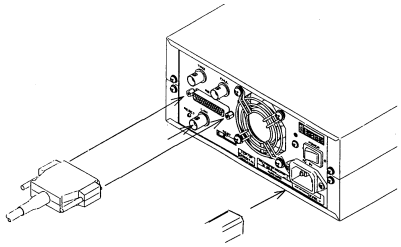
2. Software Installation

Install Softune Workbench (Version V30L10R01) 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.

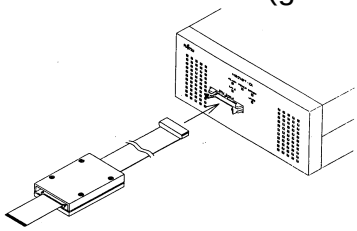
After the installation you will find Softune Workbench ready to use for the MB91360 series. Also, a demo-project (C:\Softune\Sample\Demo360) and some additional Starterkit-tools (C:\Softune\FMG_UTIL) will be installed.

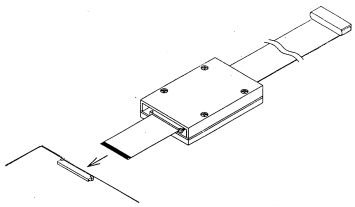
3. Hardware Setup of Targetsystem

3.1 Emulator Main Unit (MB2197-01) :
Connect the RS232-cable (DB25-side➞MB2197-01; DB9➞PC COM-port) and the power-cable (220V) For a LAN-connection (optional) refer to the manual.



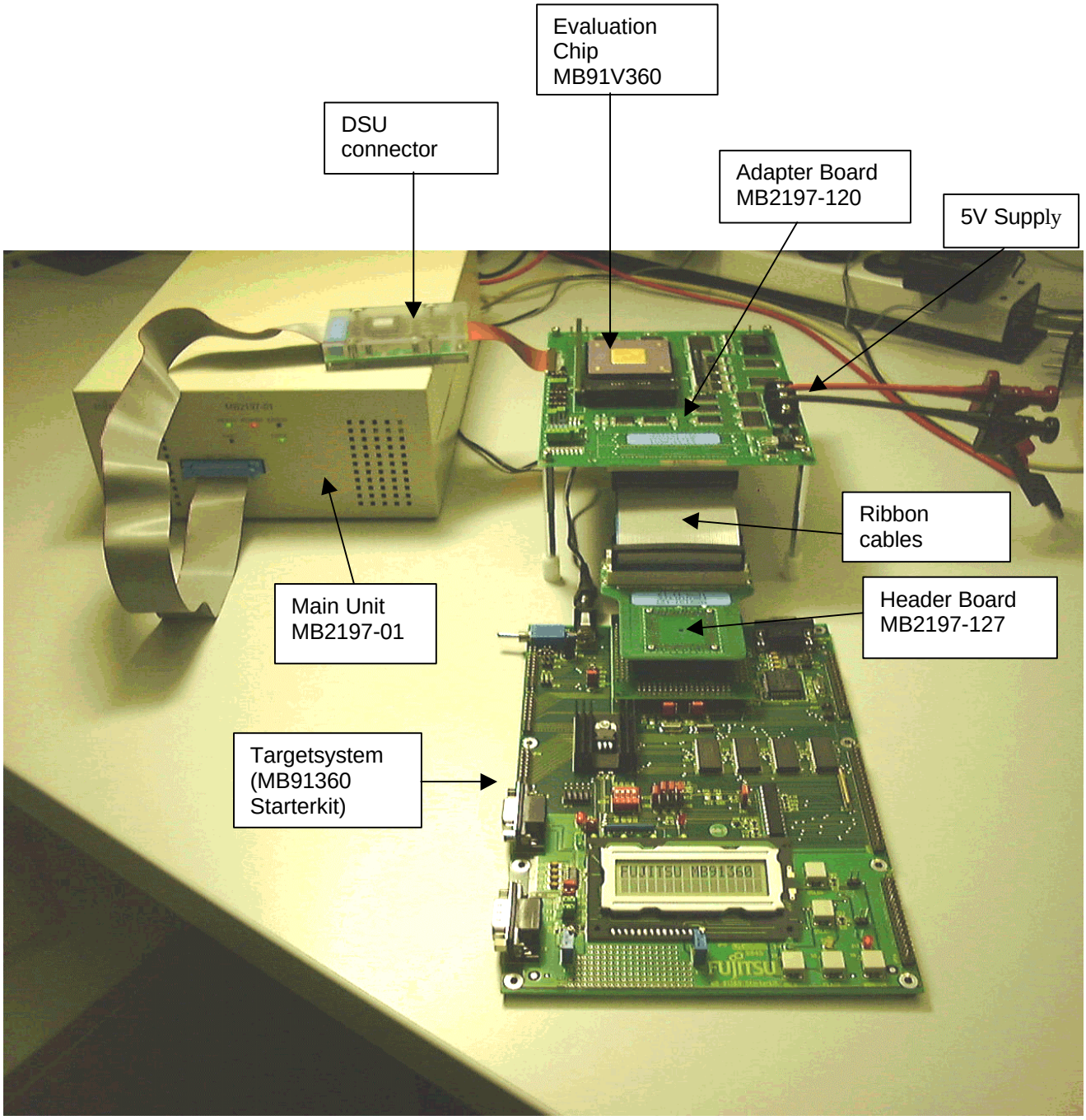
3.2 Emulation Adaptor Board (MB2197-120) :
3.2.1 Insert Evaluation-chip MB91V360
3.2.2 Check jumpers : Oscillators+LPF on Emulation Board or targetsystem (S3,S4)
VCC3 closed, Type=V360 (S3), Chip Select Settings (S1,S2) as software requires
3.2.3 Use 4 stands (screw-extensions) to hold the emulation board up (recommended)
3.2.4 Insert (short) ribbon-cables for Headerboard connection.
3.2.5 Connect a *regulated* 5V-Power supply (~ 200mA) to the DC-input terminals.
3.2.5 Insert DSU-cable (golden flatcable) to DSU-connector and to Main Unit (on





frontside).

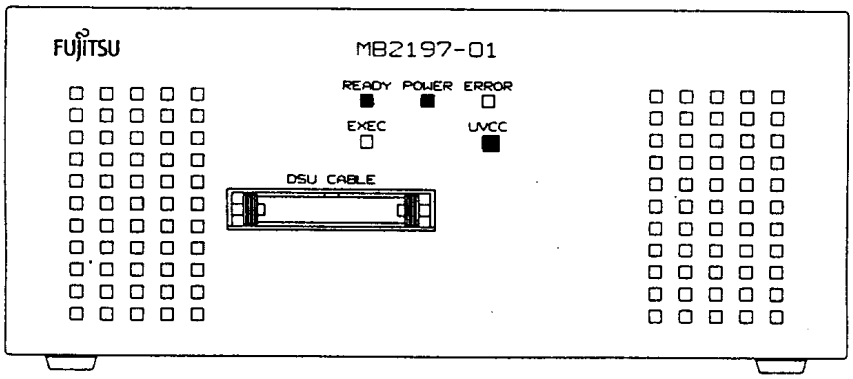
3.3 Header-Board MB2197-127 :
Mount the header-board onto the target-system (e.g. MB91360 Starterkit) using the 4 screws of the socket.
3.4 Prepare target system
MB91360 Starterkit : DC (>7V)-power supply, be sure to have the system switched off.



typical emulator system setup for the MB91360

4. Initialization

Power up Main Unit first (only „Power“-LED is lit), then 5V-Power-supply for Adapter-board and finally power up the target-system („Uvcc“ and „Ready“ LEDs now on).



a) Select “Monitor Loader” from the Softune program group. Select the “20DSU3.HEX”-monitor file located in …/LIB/911 and click on *Start* to download the file to the MB2197-01. **This must be done only once.**

b) The Emulator System is now ready to use. Execute Softune Workbench and load the Demoprojekt („Load Project“). Use Build to check wheather it compiles without errors. Select „Debug – Start Debug“ to invoke the emulator. If the ABS-file will not be downloaded automatically, use „Load Target File“. Hit the Go-button to start execution.

5. Trouble shooting

Problem	Solution
"Communication Error" occurs while trying to …start the emulator software …download the monitor-file	Check the RS232-Connections : ☛ 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 . ☛ Check the target system ! If the Mode-Pins are not set correctly (to "000"=single chip) or INITX, HSTX, oscillator etc. are incorrect, this can lead to a communication error message !
"Verify Error at xxxxxx" occurs while trying to download a program to the target system	The evaluation Chip could not write data or code in the region which was specified in the ABS-file ! ☛ Check the CS-settings on the Emulation Adapter Board (Jumpers S1 and S2)
"Invalid emulator monitor program" occurs while trying to start the emulator software	The monitor-program inside the MB2197-01 does not match with the DSU3-communiction protocol required by the MB91V360-chip. ☛ Reload the 20DSU3-monitor file
How do I have to set my Chip-Selects on the Emulatorboard (MB2197-120) for MB91F361 ?	☛ Since MB91F361 has 512kB ROM hardwired on CS1 in the range 180000..1FFFFF, the best way is to configure the emulator in the same way : On S1, set the CS1-Jumper to EVA and on S2, set the CS1-Jumper to SRAM. This routes the CS1-related memory areas (ROM) to the emulation RAM. However : Having this configuration, you'll have to use a special procedurefile "FASTCS1.PRC" to tell the emulator about this configuration before any download occurs ! This is because the EVA-Chip (MB91V360) cannot access the ROM-area before the internal Boot-ROM has been executed (where usually these chip-select settings will be made). You will find the procedurefile in one of the sample-projects (e.g. DEMO360). Use "Project-Setup-Debug-Change-(Setup Wizard)-Specification of batch file..." to select the appropriate file. Note : Do NOT set two CS-Jumpers on the same emulation memory (SRAM or FLASH), since this will lead to a short on the CS-outputs!

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

6. Available Documentation

1. MB91360 Hardware Manual
2. MB91360 Datasheet
3. MB91360 Starterkit Description
4. FR Family C-Compiler Manual
5. FR Family Instruction Manual
6. FR Family Assembler Manual
7. FR Family Simulator Manual
8. FR Family Emulator Manual
9. FR Family Linkage Kit Manual
10. FR Family Absolute Assembly Generator
11. FR Family Softune Development Manager Manual