



**MOTOROLA**

*Semiconductor Products Sector*

*Product Release Guide*

## Motorola MMCEVB2107 Evaluation Board

### 1 Overview

This guide explains installation and other information for the MMCEVB2107 Evaluation Board (EVB2107), a development tool of Motorola's M•CORE™ family. This tool lets you develop code to be embedded in an MMC2107 microcontroller unit.

A standalone tool, the EVB2107 uses an RS232 connection to your computer. This connection lets you use Motorola's System Development Software (SysDS), which comes with your EVB2107. The SysDS includes a loader and the Picobug monitor. The GNU source-level debugger also comes with your EVB2107.

The SysDS loader lets you download your code into SRAM (for execution) or into external or internal FLASH memory (for execution or for storage in non-volatile memory).

For operating instructions and reference information, see the EVB2107 user's manual. For additional information about the entire family of M•CORE products, visit the web site <http://www.mot.com/SPS/MCORE/>.

### 2 System Requirements

You need an IBM PC or compatible computer, running the Windows 95 or WindowsNT (version 4.0) operating system. The computer requires a Pentium (or equivalent) microprocessor, 16 megabytes of RAM, 50 megabytes of free hard-disk space, an SVGA color monitor, and an RS232 serial-communication port. You also need a C compiler, an M•CORE assembler, and an M•CORE linker. To use the Picobug debug monitor, you also need Hyperterminal or a comparable terminal-emulation program

To get the most from your EVB2107, you should be an experienced C or M•CORE assembly programmer.

The power supply that comes with your EVB2107 converts line power to the input power that the EVB2107 needs: 12 volts at a minimum of 0.5 amperes.

### 3 EVB2107 Software

The factory ships your EVB2107 with system software already downloaded into FLASH memory. This means that you immediately can use the Picobug monitor to debug your code.

The CD-ROM that comes with your EVB2107 contains such additional software as GNU source-level tools and SysDS. Still more compatible development tools are available from other companies. (For the latest list of such third-party tools, visit either of these web pages:

[http://www.mot.com/SPS/MCORE/tools\\_new\\_partners.htm](http://www.mot.com/SPS/MCORE/tools_new_partners.htm) OR

[http://www.mot.com/SPS/MCORE/tools\\_tools.htm](http://www.mot.com/SPS/MCORE/tools_tools.htm).)

### 4 Installing Software

Follow these steps to install software for your EVB2107:

1. Insert the MMC2107 CD-ROM into your CD-ROM drive. The install shield should begin automatically. (If the install shield does not start automatically, click on the Start button and select Run, then use the Run dialog box to run file `Autorun.exe` of the CD-ROM.)
2. An M•CORE install shield screen appears. Click on the M•CORE Tools button. This brings up a second install shield screen.
3. To install the GNU software, click on the second screen's Install GNU Tools button, then follow the instructions of successive screens. An installation-complete message appears, indicating successful installation.

**NOTE:** *Install the GNU software into the default directory; do not browse. Changing the installation directory may give undesirable results.*

(For instructions on using the GNU software, see the GNU documentation on the CD-ROM.)

4. Click on the OK button of the installation-complete message box to return to the second install shield screen. Click on the Back button to return to the first install shield screen.
5. Click on the MMC2107 button. This brings up a new screen that includes Install SysDS Loader and Read Me buttons. To install the SysDS loader, click on the Install SysDS loader button, then follow the instructions of successive screens. A copy-successful message appears, indicating successful installation.

**NOTE:** *Be sure to use the install shield to install the SysDS loader. Merely copying the SysDS loader file from the MMC2107 CD-ROM does not install the program correctly.*

(For instructions on using the SysDS loader, see the EVB2107 user's manual.)

6. Click on the OK button of the copy-successful message box to return to the first install shield screen.
7. To see the EVB2107 readme file, click again on the MMC2107 button, then click on the Read Me button.
8. When you are done with installation activities, click on the Exit button of any screen.

### 5 Factory Hints

1. Your EVB2107 supports Picobug only at the communication rate of 19200 baud.

2. If GNU tools do not work after you have installed them, your initial environment space may be too small: it should be set to at least 4096 bytes. (The way to make this setting may be different for each system. For assistance, refer to your Windows documentation, to Microsoft technical support, or to M•CORE technical support.)
3. It is possible for the FLASH programmer to load part of user code into FLASH memory and the rest into SRAM. In such a situation, the verify function applies only to the part of the code in FLASH. (That is, the verify function would not detect a download error to SRAM.)
4. If your host computer is a Compaq machine, its serial-port driver could make your EVB2107 hang up. In an extreme case, the computer could hang up as well. To prevent such a problem, get the latest BIOS (which includes a serial-port driver) from the Compaq web site: <http://www.compaq.com/support/files/desktops/us/index.html>. Among the information at this site is an appropriate Compaq phone number.
5. Any unsuccessful download during a FLASH programmer session may prevent complete closure of the FLASH programmer task, so that the task does not release the communications port. In such a case, press Ctrl-Alt-Delete:
  - For Windows 95, this brings up the Close Program dialog box. Select Motorola SysDS Loader, then click on the End Task button.
  - For WindowsNT, this brings up the Security dialog box. Click on the Task Manager button, to bring up the Task Manager dialog box. Select Motorola SysDS Loader, then click on the End Task button.
6. If you use the alternate EVB2107 memory map (that is, if the Swap 02/20 subswitch is OFF), you must use an EBDI or other debugger that communicates through the OnCE™ interface. The alternate memory map prevents use of Motorola system software, which is FLASH based.
7. Resetting the EVB2107 (or cycling board power) during operation of SysDS Loader software may end communication between the board and the SysDS Loader software. If so, exit, then restart, the software.
8. If you use the SysDS Loader to download an S-record, the value of the S-record count field must be a multiple of 4. (This requirement may require a change to factory settings of CodeWarrior software.)
9. Do not let your own application erase EVB2107 system software (FLASH sectors 0 through 3). Recovery from such an erasure is possible with the help of Motorola Customer Service, but requires an EBDI.
10. Should you experience problems using an EBDI with your EVB2107, the switch S1 Boot Ex/In subswitch likely is set to ON. Set the subswitch to OFF (that is, configure internal boot).
11. If you use an EBDI, do not use the SysDS Loader Erase FLASH button. Use instead the Erase Sector button, to erase FLASH sectors individually. (The Erase FLASH button does work correctly if you have serial communication with the host computer.)

## 6 Customer Support

If you need support for your EVB2107, you may contact Motorola technical support via the web site <http://www.mot-sps.com/>. Selecting technical support from this web site brings up a form for reporting your situation. After receiving such a report, a Motorola specialist will work with you to determine the problem's severity, and to schedule a resolution of the problem. Examples include upgrading to a more recent release, determining a workaround, or developing a software correction.

For information about a Motorola distributor or sales office near you call:

AUSTRALIA, Melbourne – (61-3)887-0711 Sydney – 61(2)906-3855	JAPAN, Fukuoka – 81-92-725-7583 Gotanda – 81-3-5487-8311 Nagoya – 81-52-232-3500 Osaka – 81-6-305-1802 Sendai – 81-22-268-4333 Takamatsu – 81-878-37-9972 Tokyo – 81-3-3440-3311
BRAZIL, Sao Paulo – 55(11)815-4200	KOREA, Pusan – 82(51)4635-035 Seoul – 82(2)554-5118
CANADA, B. C., Vancouver – (604)606-8502 ONTARIO, Toronto – (416)497-8181 ONTARIO, Ottawa – (613)226-3491 QUEBEC, Montreal – (514)333-3300	MALAYSIA, Penang – 60(4)2282514
CHINA, Beijing – 86-10-68437222	MEXICO, Mexico City – 52(5)282-0230 Guadalajara – 52(36)21-8977
DENMARK – (45)43488393	PUERTO RICO, San Juan – (809)282-2300
FINLAND, Helsinki – 358-9-6824-400	SINGAPORE – (65)4818188
FRANCE, Paris – 33134 635900	SPAIN, Madrid – 34(1)457-8204
GERMANY, Langenhagen/Hannover – 49(511)786880 Munich – 49 89 92103-0 Nuremberg – 49 911 96-3190 Sindelfingen – 49 7031 79 710 Wiesbaden – 49 611 973050	SWEDEN, Solna – 46(8)734-8800
HONG KONG, Kwai Fong – 852-6106888 Tai Po – 852-6668333	SWITZERLAND, Geneva – 41(22)799 11 11 Zurich – 41(1)730-4074
INDIA, Bangalore – (91-80)5598615	TAIWAN, Taipei – 886(2)717-7089
ISRAEL, Herzlia – 972-9-590222	THAILAND, Bangkok – 66(2)254-4910
ITALY, Milan – 39(2)82201	UNITED KINGDOM, Aylesbury – 441(296)395-252
	UNITED STATES, Phoenix, AZ – 1-800-521-6274

While every effort has been made to ensure the accuracy of all information in this document, Motorola assumes no liability to any party for any loss or damage caused by errors or omissions or by statements of any kind in this document, its updates, supplements, or special editions, whether such errors are omissions or statements resulting from negligence, accident, or any other cause. Motorola further assumes no liability arising out of the application or use of any information, product, or system described herein; nor any liability for incidental or consequential damages arising from the use of this document. Motorola disclaims all warranties regarding the information contained herein, whether expressed, implied, or statutory, *including implied warranties of merchantability or fitness for a particular purpose*. Motorola makes no representation that the interconnection of products in the manner described herein will not infringe on existing or future patent rights, nor do the descriptions contained herein imply the granting or license to make, use or sell equipment constructed in accordance with this description.

The Motorola name and logo are registered trademarks of Motorola, Inc.; M•CORE and OnCE are trademarks of Motorola, Inc. Other trademarks belong to their respective owners.

© Motorola, Inc. 2000; ALL RIGHTS RESERVED