



Trouble Shooting the 80386 EX Evaluation Board

First you need to determine which version of the evaluation board you currently have. There are two different versions of the evaluation board, Revision 1 and Revision 2.1. The revision number should be written on the evaluation board, but another way to determine which revision you have is to look at the SRAM. There is only one SRAM socket on the first revision of the evaluation board, but there is two SRAM sockets on revision 2.1.

If the Flash Utility will not initialize, do the following, in order:

1. Some boards have been noticed to have a touchy reset button. Press this button firmly for about one second and then re-attempt to initialize. Try this several times before moving to step 2.
2. Make sure jumper JP1 is connected. If it is not, put it on and reset the board.
3. Make sure you are using a 6 pin PS1 style power connector with appropriate voltage levels.
4. Make sure the serial connection is from either COM1, 2, 3, or 4 on the host PC to the P2 (DTE Connection) on the evaluation board. This connection must be made using a straight through 9 pin serial cable. Do not use a null modem cable for this connection.
5. If you have revision 1 of the evaluation board you can not run DOS on the host PC as a shell under Windows. The flash utility may not initialize if you are doing this. If you insist on running under Windows, setting the DOS shell foreground priority to 10000 may solve the problem, however, there are no guarantees. Running without Windows is best for revision 1 of the evaluation board.
6. Check which version of the flash utility you are using. The version number will appear immediately after you execute the ``flashu'` command. If you are using v1.0, the host PC requires a math co-processor, v1.1 of the flash utility does not require the host PC to have a math co-processor. Version 1.1 of the flash utility should be used with revision 1 of the evaluation board and can be downloaded from Intel's BBS (916-356-3600), filename FLASHU.EXE. (Note: all 486DX, 486DX2, 486DX4 and Pentium(TM) processor based PCs have a math co-processor built onto the processor, thus this problem only applies to all 486SX and older based machines.) Version 2.0 of the flash utility should be used with revision 2.1 of the evaluation board and requires a ``FLASHLDR'` command for execution. This file can be downloaded from Intel's BBS system, the file name is FLASHLDR.EXE (Note: Version 2.0 of the flash utility can be used with revision 1 of the evaluation board if the flash boot code is updated. The flash boot code which is associated with version 2.0 of the flash utility can be downloaded from our BBS system under the filename EV38621.ZIP.)
7. For revision 1 of the evaluation board make sure that the Flash device is positioned correctly in its socket. The orientation of this Flash device is such that the dimple indicator should be positioned in the corner of the socket that is closest to the P1 DCE modem connector on the board. Also, make sure that the Flash device being used is the one shipped with the board. If a new flash device is installed, the target program, FLBOOT.BIN, must be programmed in the device using an external programmer (for example FLASHEVAL2 kit with a FLASHEVAL5 module).

8. Check all jumpers on the board.
9. If none of this works, the problem is most likely PC related. The solution at this point is to reboot the PC using a separate boot disk which contains a config.sys and autoexec.bat without network or Windows interface. Another possible solution is to try the program on a different PC altogether.

If the Flash Utility will initialize, but will not program the Flash device:

1. Check all connections, jumpers, and power supply voltage levels.
2. The `program` command of the flash utility causes 3 consecutive events to occur: READ, PROCESS flash blocks, and PROGRAM flash blocks. Determine where the programming algorithm breaks down and debug accordingly.

READ ...

- Reinitialize the board at a different baud rate and try again. The flash utility is designed to operate at either 9600 or 19200. If the flash utility continues to fail during READ, move on to PROCESS flash blocks.

PROCESS flash blocks ...

- Reinitialize the board at a different baud rate, by typing BAUD=19200. The flash utility is designed to operate at either 9600 or 19200. The default is 9600. If you are running under a windows environment with revision 2.1 of the evaluation board the maximum baud rate you can use is 9600 at this time.
- Reinitialize the evaluation board flash memory map by typing: BOARD=EXEVAL.
- Reinitialize the evaluation board flash blocks by typing: RT, followed by a shutdown. Note, this command will erase any previous file you may have loaded into the flash device.
- If the flash utility fails at completely random places during the PROCESS portion of the program, the problem is most likely PC related. Although the reason for this is still under investigation, certain PCs have had random problems during the PROCESS portion of the programming algorithm. Sometimes it crashes after processing only a few Kbytes, sometimes up to several 100 Kbytes. The recommended solution at this point is to reboot the PC using a separate boot disk which contains a config.sys and autoexec.bat without network or Windows interface. Another possible solution is to try the program on a different PC altogether.

PROGRAM flash block ...

- Meter pin #1 (Vpp) of the Flash device. This pin should be raised to 12 volts at the very end of the programming algorithm. If this pin never goes to 12 volts even though it says "Program 28F400BX-T flash block #n", the problem may be within the SMT labeled Q1 on the board. If this appears to be the problem, Intel recommends obtaining a replacement board, rather than trying an in house repair.

If the board still does not work after checking all of the above or it has been determined to be a defect in the hardware of the board contact your local Intel Representative, or Intel Technical Support at (800)-628-8686 for further assistance.

* [Legal Information](#) © 1998 Intel Corporation