

# Emily52

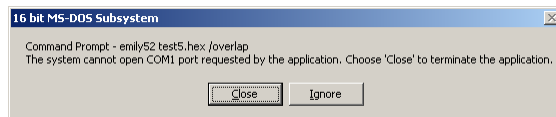
A Simulator/Emulator for the 8051 and 8052  
Dunfield Development Services Inc.  
<http://www.dunfield.com>

## Overview

- A simulator allows you to verify program correctness without operational embedded hardware. It gives you the ability to carefully examine program execution and memory/register usage.
- Emily52 is a simulator/emulator for the 8051 architecture
- Target hardware or SFR emulation code is required to accurately simulate the SFRs. We don't typically use this feature in this course.
- Steps for debugging your program:
  1. Create an assembly (or C) source file. Edit your source code, if corrections or enhancements are required.
  2. Assemble (or compile) the source to create a hex file (.hex extension)
  3. Load the hex file into Emily52 (started with the /overlap option)
  4. Use the features in Emily52 to execute your program and examine registers and memory contentsRepeat steps 1-4 as needed until your program is complete and correct
- For more detailed information, refer to the Emily52 and ASM51 documentation included with Emily52.

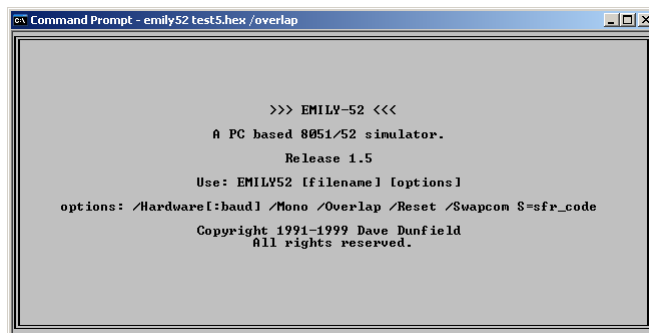
# Starting Emily52

- Emily52 must be used with the /overlap option in order for the simulator to act like the target hardware used in this course
- From a DOS command prompt, start Emily52 in one of the following ways (assuming Emily52 is in your computer's PATH environment variable):
  - emily52 file.hex /overlap
  - emily52 /overlap (and then load a hex file using the 'L' option)
- When you start Emily52, you may see a warning that the system cannot open the COM1 port. Click on the Ignore button to continue.



# Splash Screen

- When Emily52 starts, you see a splash screen.
- TIP: You can skip this screen (and save 5-10 seconds of your valuable time) by pressing any key when this screen appears.



# Main Window (Control Panel)

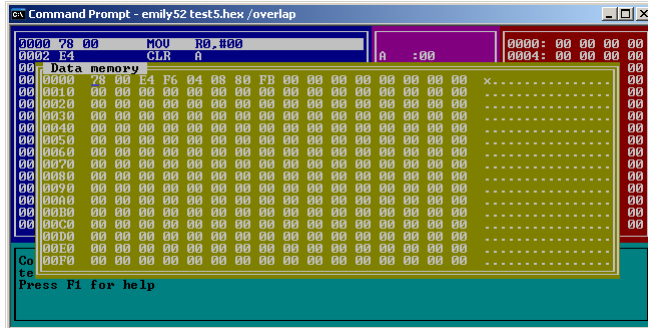
- The Main Window shows you the contents of program memory, registers, internal memory (IRAM), and simulator status
- To exit Emily52, press the escape key 'ESC'

# Main Help Window

- Press 'F1' from the Main Window to get the Main Help Window
- Note: Pressing the space bar will single step one instruction
- Note: Pressing 'G' and a carriage return ('CR' or 'Enter') will cause the program to execute non-stop
- Press the escape key 'ESC' to close the help window

# External Data Window

- Press 'D' from the Main Window to open the External Data Window
- This window shows you the contents of external data memory (SRAM, accessed in hardware using the /RD and /WR signals)

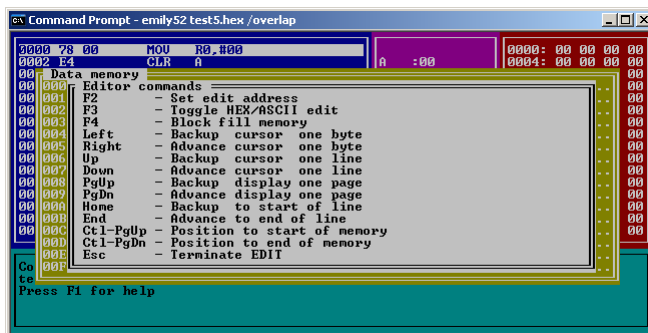


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7

# External Data Help Window

- Press 'F1' from the External Data Memory Window to get a help window specific to external data memory
- TIP: You can use 'Block fill memory' to clear a range of data memory to '00' or set the range to any other 8-bit value



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8