SoM-NE64M

Quick Start

REV. 0.2

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2 Hardware Check

It is important to test your SoM-NE64M in the SoM-100ES carrier before writing or downloading any code. The SoM-NE64M flash is preloaded with a serial debugger and a test program when it ships from the factory. If the SoM-100ES carrier is powered properly (please refer to the SOM-100ES Quick Start) and there is nothing connected to HDR11, the serial debugger will start the test program and a green LED on the SoM-NE64M will be flashing indicating that the test is running. If a 20x2 LCD is properly connected to the carrier, the message "Test Started…." will be shown on its display (note that the display will continue to show the text and even a blinking cursor even when the program is no longer running).

The test program has an interactive menu that is designed to work with terminal software (like Hyperterminal in Windows) when you connect CN2 to one of your PC's free serial ports using a null modem cable (CN2 must be jumpered as RS-232) The terminal should be configured to 19,200 baud, no parity, 8 data bits, 1 stop bit and hardware flow control set to NONE. After connecting the serial cable and configuring Hyperterminal and resetting or powering-up the board you should see something similar to the following on the terminal display:

```
SoM-NE64M rev 1 demo rev 0.3



SoM-NE64M MODULE PERIPHERAL TESTS

1=ADC test
2=Serial test
3=External SRAM test
4=RTC test
5=IIC Serial EEPROM test
6=Digital I/O test
7=Ethernet configuration

SoM-100ES CARRIER PERIPHERAL TESTS

A=LTC1290 ADC test
B=DAC test
C=Keypad test
D=LCD test
E=Digital I/O test
```

3 CodeWarrior Development Studio

Go to www.freescale.com and download and install CodeWarrior Development Studio for HCS12X Microcontrollers V*x.x* (Special Edition).

Copy the SoM-NE64M_*xx* project folder from the CD to the following directory:

```
…\Program Files\Metrowerks\CodeWarrior CW12_V3.1
```

It is highly recommended that you keep a unmodified version of the test program project available in another folder while you are developing your own project. This will allow you to go back and download a known working version of the program in case you have problems while developing your own project.

The fastest way to make your own project is to base yours on the test program. To do this copy the folder again in the same directory and rename it, for example, SoM-NE64M_*xx*_prj_01. Go inside the folder and rename the project file SoM-NE64M_*xx*.mcp to SoM-NE64M_*xx*_prj_01.mcp. It will still work if you don't change the name but using different names allows you to differentiate between the two projects if they are both open in the IDE at the same time.

Start the CodeWarrior Development Studio and go to FILE-OPEN then browse to the folder that was copied to open the SoM-NE64M_*xx*_prj_01.mcp file. This will open the project for editing.

On the left side of the window are the files used by the project. Under the sources folder is a file called test.c. Open this and find the following (or similar) line:

```
printf("SoM-NE64M rev 1 demo rev 0.3\n\r");
```

and change it to:

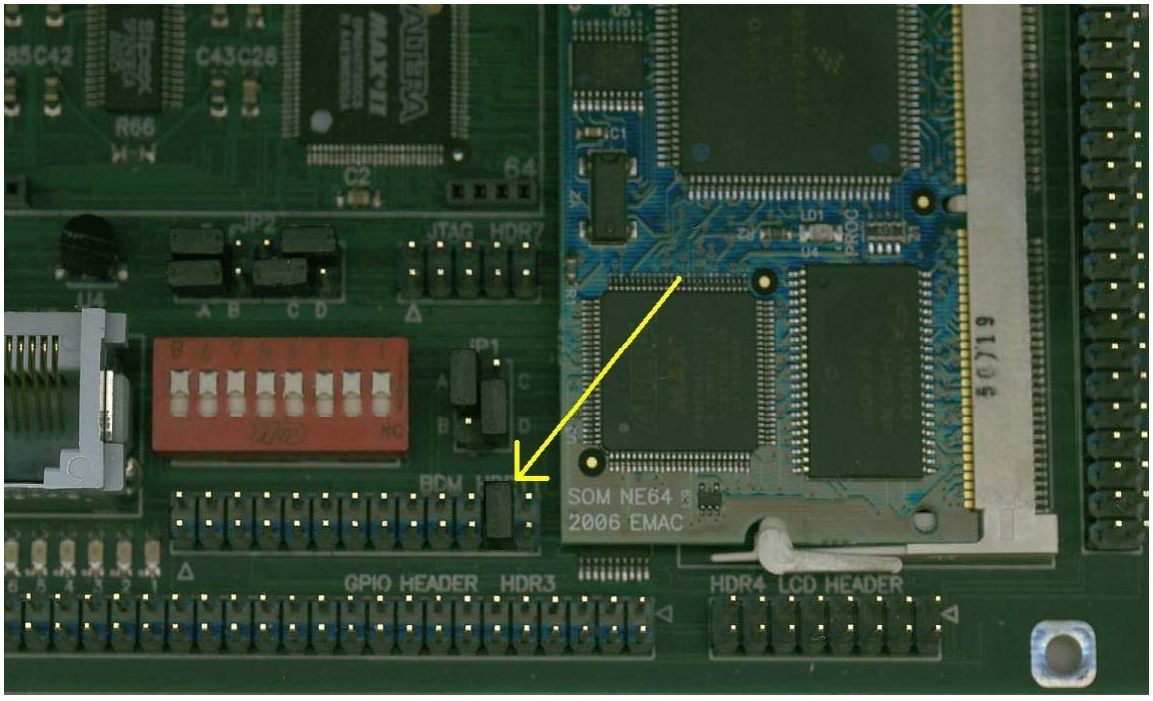
```
printf("SoM-NE64M rev 1 MODIFIED demo rev 0.3\n\r");
```

If you decide to strip out unused code in your program, keep in mind that some modules depend on others. For instance the Countdown Timers module is used by several other modules. The linker generated Monitor.map file in the bin folder has a section outlining the different object files and their dependencies.

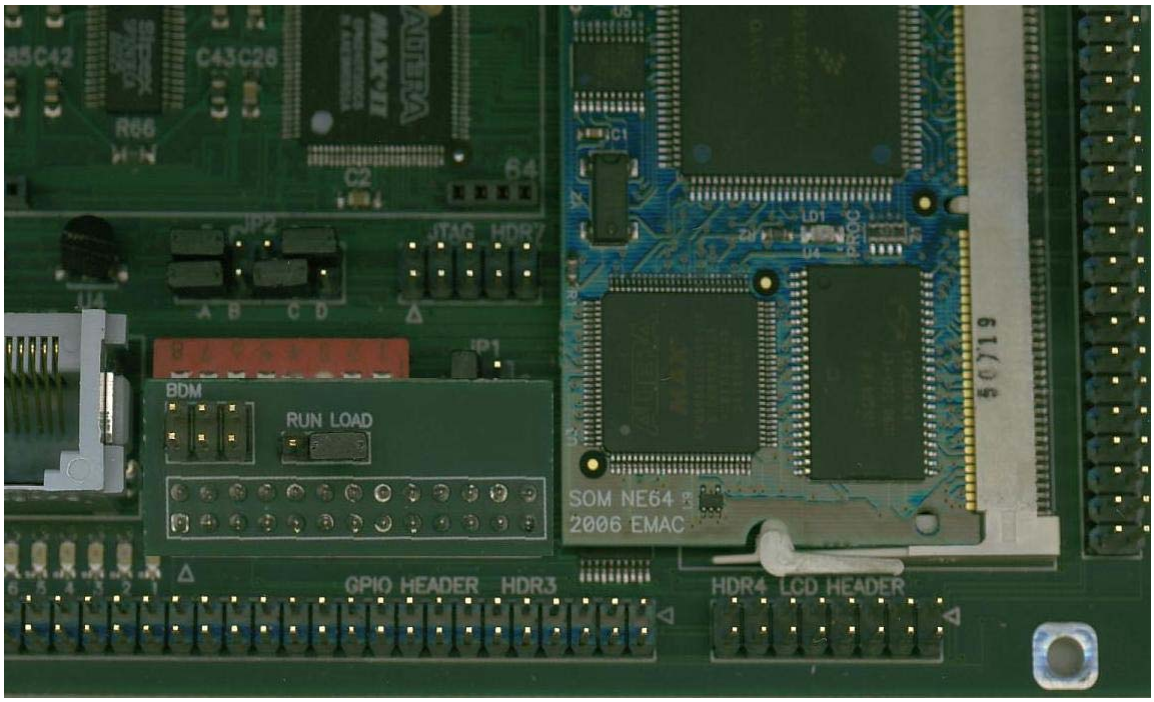
4 Using the Serial Debugger

The Codewarrior Debugger, by default, uses the PC's COM1 as the debug serial port. It is recommended to use this port to keep things simple, but another port can be used if COM1 is not available. The serial debugger that comes preloaded in the SoM-NE64M uses the SoM-100ES carrier's CN1 as its debug serial port (also known as the microcontroller's SCI0 port), so connect the PC's debug serial port to CN1.

In order to debug or download code to the SoM-NE64M using the preloaded serial debugger , it must be in LOAD mode and there are 2 ways to do this. The first way is to insert a shunt in HDR11 in the position as shown below:



The other way is to insert an optional BDM adaptor board with a shunt in the LOAD position as shown below:

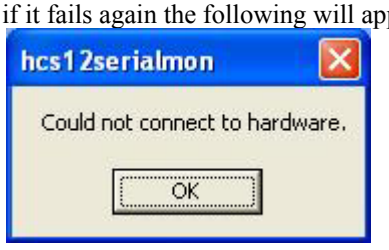


You must press reset or power-up the board after inserting the shunt or the BDM adaptor in order for the LOAD mode to be activated.

Press the F5 button and the IDE will compile, link and attempt to download the program to the SoM-NE64M.

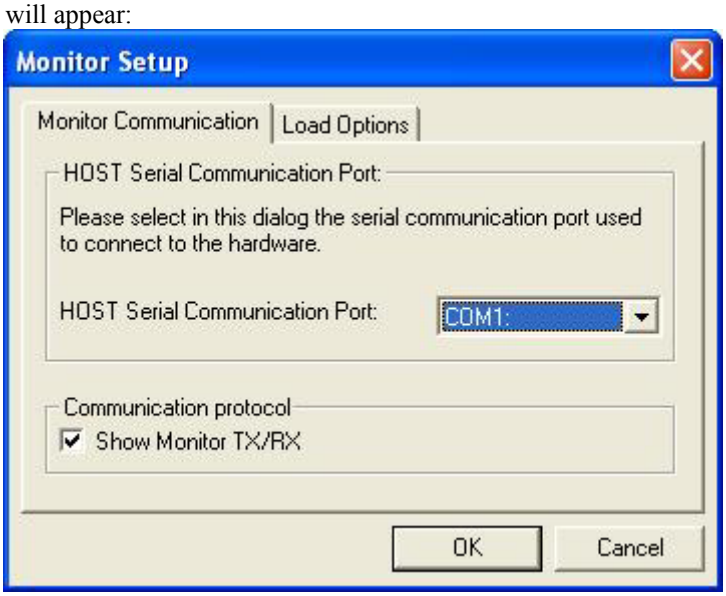
If it fails to connect, the following message box will appear offering troubleshooting ideas:

Troubleshoot the system then press retry and if it fails again the following will appear:

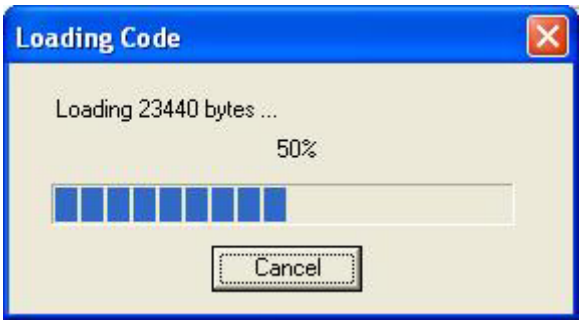


Press okay and the following will appear:

Press retry and the following will appear:



From this dialog you can select the correct serial port if COM1 is not available on your computer. Press OK and if everything is properly configured, you will see the debugger erase the memory and download the program while displaying a progress bar similar to the one shown below:



After the progress bar disappears you may press F5 to start/resume the program, F6 to stop and F11 to single-step. Press F1 for further help with the debugger.

When the application is fully debugged and ready to deploy, you can put the serial debugger into RUN mode by removing the shunt from HDR11, or if the optional BDM adaptor board is being used, by moving the shunt to the RUN position. When in RUN mode the serial debugger will run the application upon reset or power-up.

