



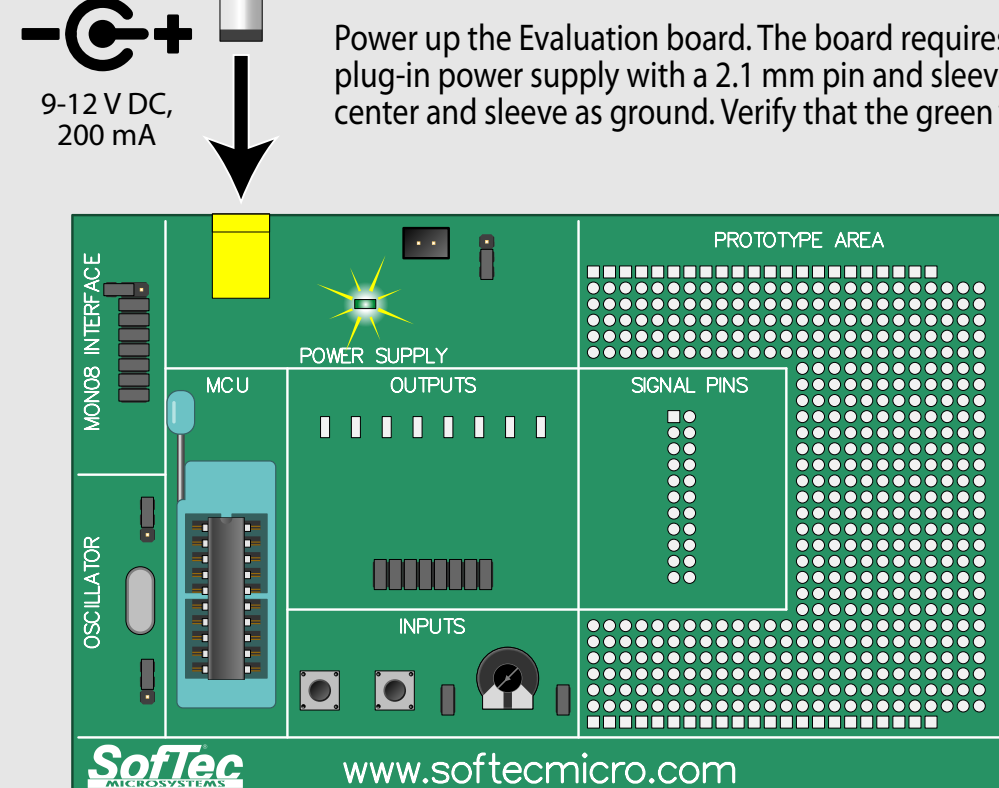
# inDART-HC08 Design Kit Quickstart Tutorial

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## Power Up the Evaluation Board

Every Evaluation Board comes with the microcontroller pre-programmed with a sample application. When working in standalone mode, the sample application configures the A/D peripheral to convert on the A/D channel connected to the potentiometer and displays the results on the LEDs.

Power up the Evaluation board. The board requires a 9-12 V DC, 200 mA wall plug-in power supply with a 2.1 mm pin and sleeve plug with positive in the center and sleeve as ground. Verify that the green "POWER" LED turns on.



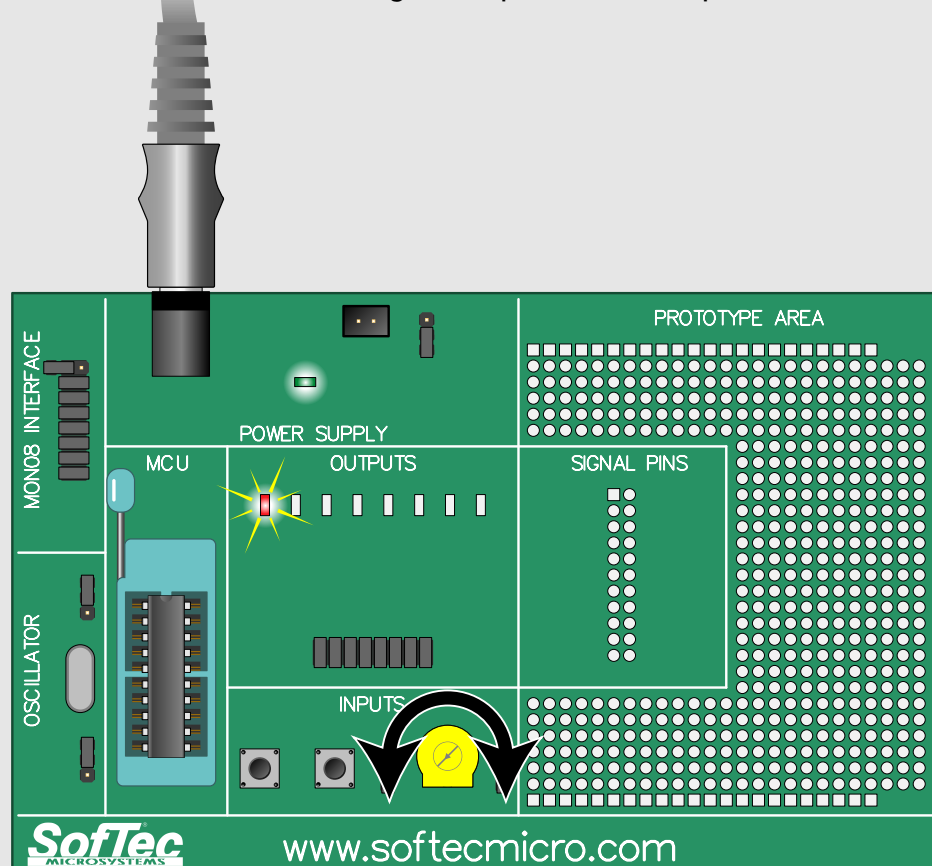
*Note: This tutorial assumes that the Evaluation Board is first used with all of the jumpers in the factory settings position. For more information, please refer to your specific Evaluation Board's user's manual.*

*Please also note that the Evaluation Board shown here might be different from yours; however, connectors and functionality are equivalent.*

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## Rotate the Potentiometer

Rotate the potentiometer and notice how the user LEDs turn on/off according to the position of the potentiometer.

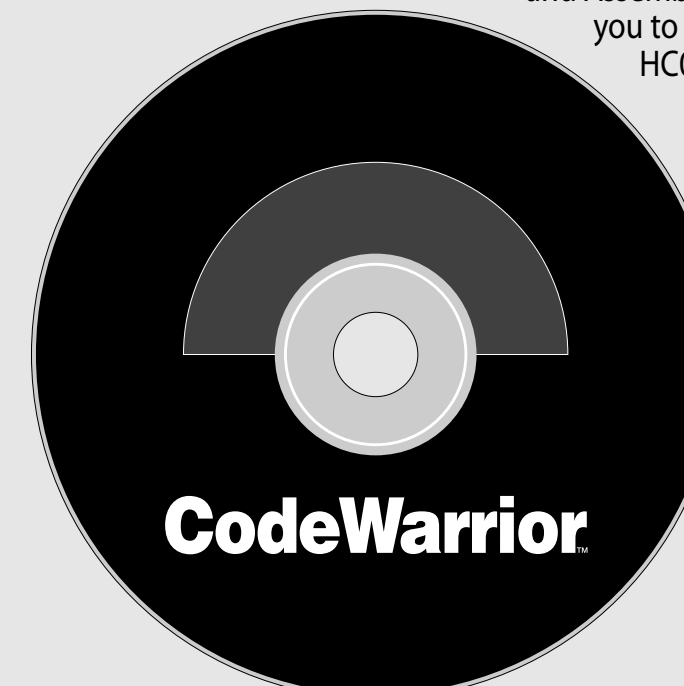


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## Install CodeWarrior HC08

inDART-HC08 comes with a free version of CodeWarrior Development Studio for HC08 Microcontrollers, Special Edition.

CodeWarrior Development Studio for HC08 Microcontrollers, Special Edition, includes the CodeWarrior integrated development environment (IDE); 16 KB code-size limited C compiler and C source-level debugger; macro assembler and Assembly-level debugger. The Special Edition allows you to evaluate CodeWarrior Development Studio for HC08 Microcontrollers at no cost.



To install the CodeWarrior IDE, insert the CodeWarrior CD-ROM into your computer's CD-ROM drive. A startup window will automatically appear. Follow the on-screen instructions.

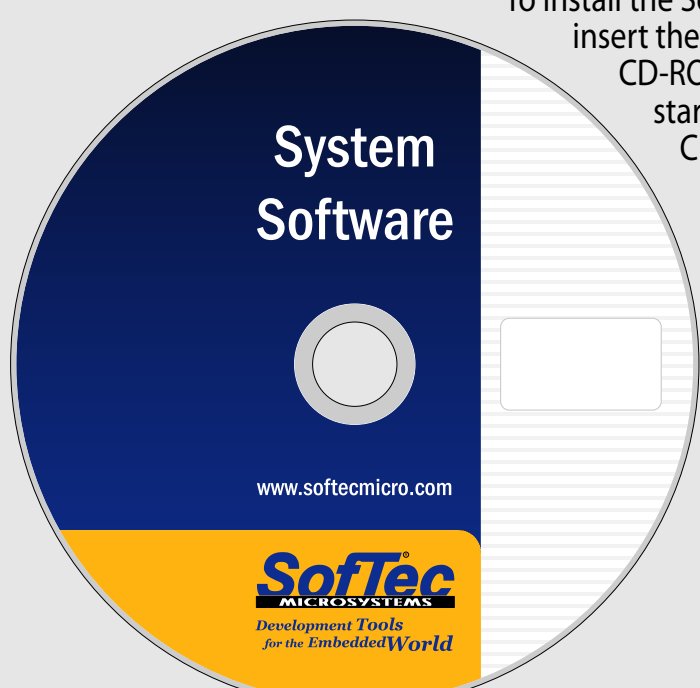
*Note: inDART-HC08 requires that a CodeWarrior version equal to or greater than 2.1.1 is present on your system. If you have an earlier version on your system, you must uninstall it and install the new CodeWarrior version which comes with inDART-HC08. If you purchased an earlier CodeWarrior version, we suggest you to contact Metrowerks to get your license extended to the new version.*

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## Install Additional Components

SofTec Microsystems Additional Components include the inDART-HC08 USB driver, the inDART-HC08 software plug-in for CodeWarrior HC08 (complete with examples, stationeries, etc.), SofTec Microsystems DataBlaze programming utility, SofTec Microsystems inSIDE HC08 debugger (a smaller alternative to CodeWarrior HC08) and Documentation in PDF format.

To install the SofTec Microsystems Additional Components insert the SofTec Microsystems "System Software" CD-ROM into your computer's CD-ROM drive. A startup window will automatically appear. Choose "Install Instrument Software" from the main menu. A list of available software will appear. Click on the "inDART-HC08 Additional Components" option. Follow the on-screen instructions.

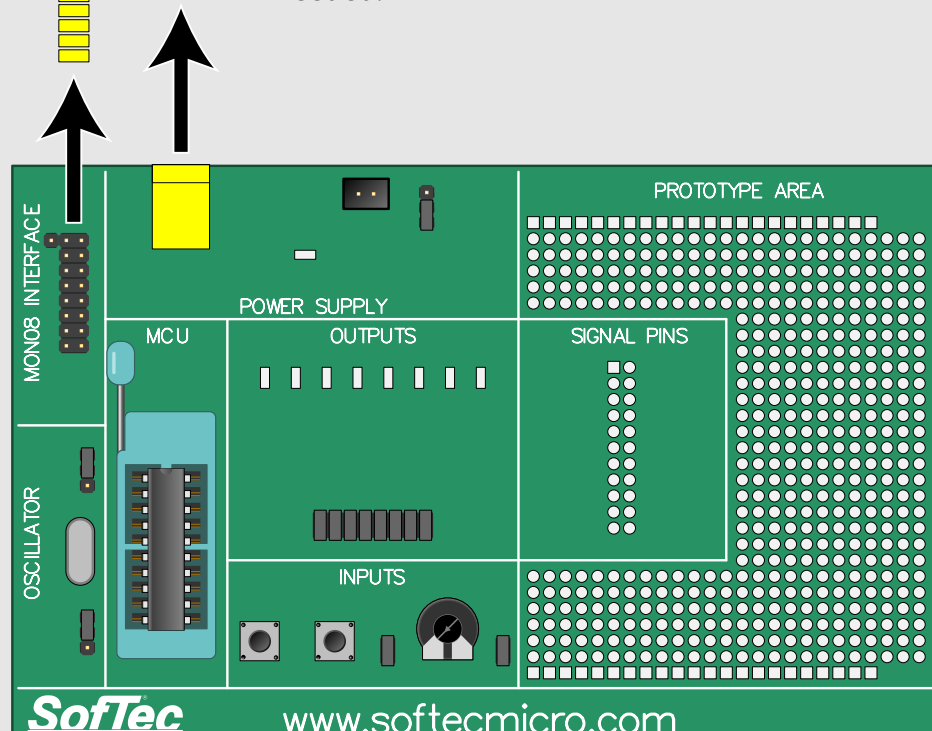


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## Remove Power Supply and MON08 Jumpers

In order to connect inDART-HC08 to the Evaluation Board's MON08 connector, the MON08 jumpers must be removed.

Additionally, inDART-HC08 is capable of powering the Evaluation Board (through a special cable), so the wall plug-in power supply is no longer needed.



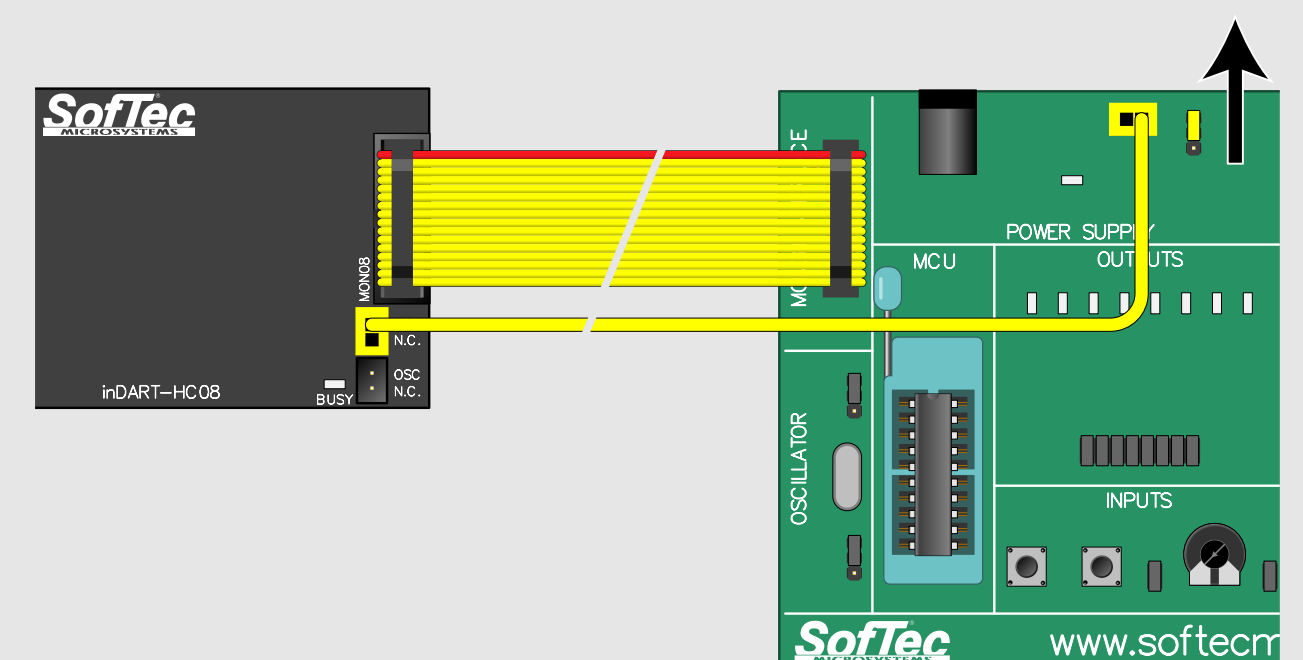
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## Connect inDART-HC08 to the Evaluation Board

Connect inDART-HC08 to the Evaluation Board via the MON08 cable.

Connect the "VDD OUT" cable to inDART-HC08's "VDD OUT" connector and to the Evaluation Board's "REG. VDD" connector.

Change the "VDD SOURCE" jumper position on the Evaluation Board so that it selects the "REG." option.



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## Connect inDART-HC08 to the PC

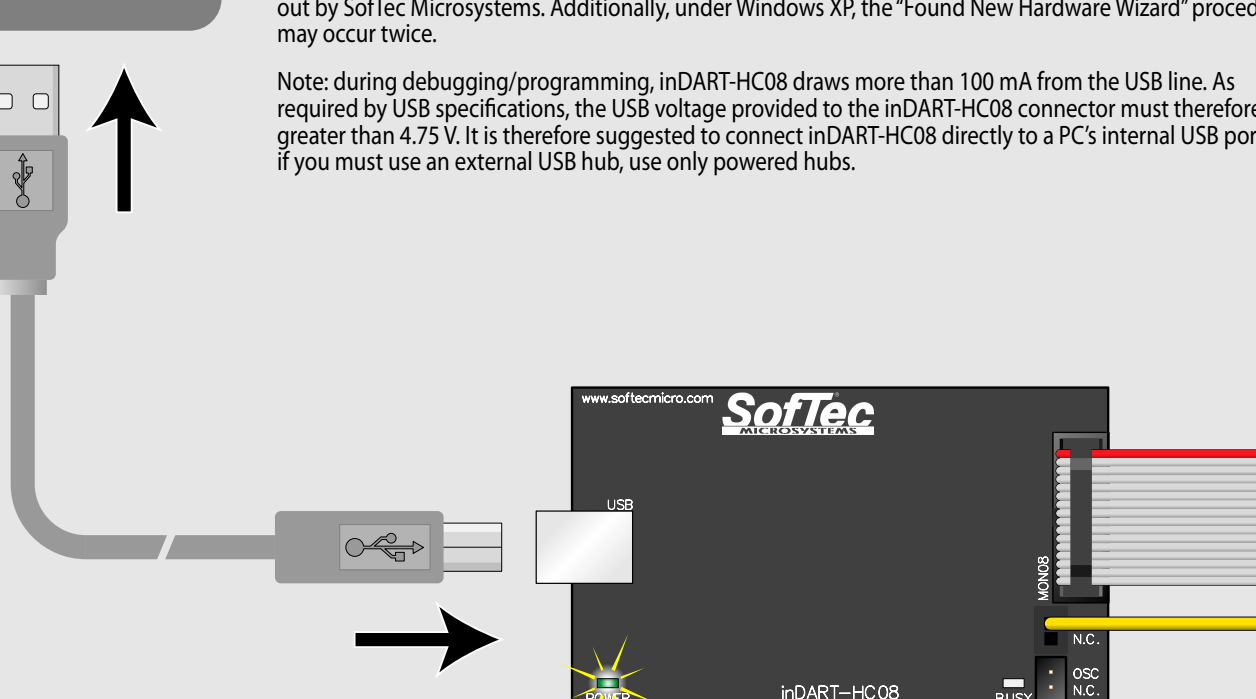
Connect inDART-HC08 to a free USB port on your PC. The green "POWER" LED on the instrument should turn on. Windows will automatically recognize the instrument and will load the appropriate USB driver.

*Note: both Windows 2000 and Windows XP may issue a warning the first time inDART-HC08 is connected to the PC. This warning is related to the fact that the USB driver used by inDART-HC08 is not digitally signed by Microsoft, and Windows considers it to be potentially malfunctioning or dangerous for the system.*

*However, you can safely ignore the warning, since every kind of compatibility/security test has been carried out by SofTec Microsystems. Additionally, under Windows XP, the "Found New Hardware Wizard" procedure may occur twice.*

*Note: during debugging/programming, inDART-HC08 draws more than 100 mA from the USB line. As required by USB specifications, the USB voltage provided to the inDART-HC08 connector must therefore be greater than 4.75 V. It is therefore suggested to connect inDART-HC08 directly to a PC's internal USB port, or, if you must use an external USB hub, use only powered hubs.*

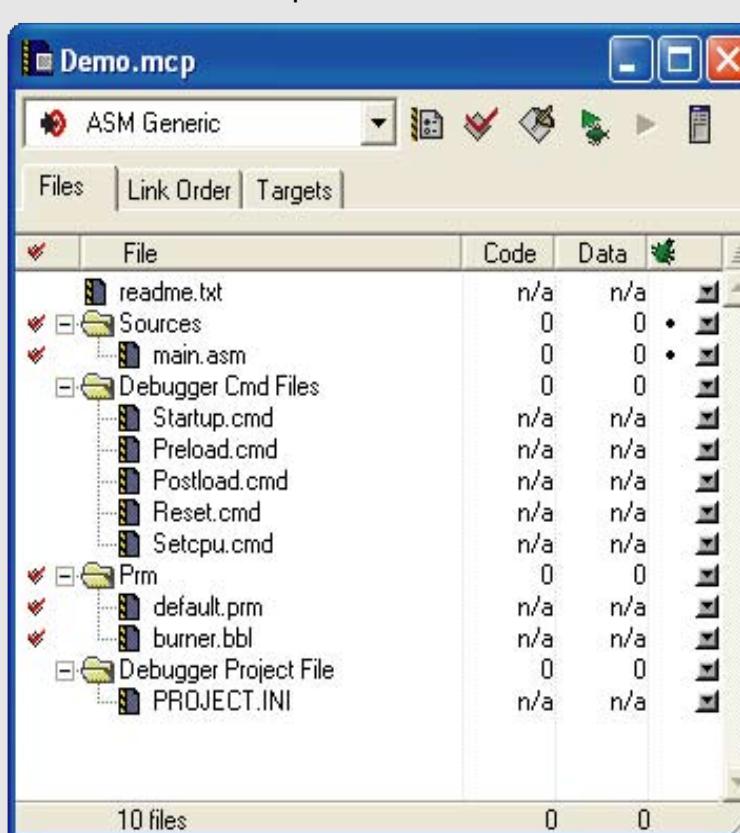
To a PC  
free USB  
Port



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## Run CodeWarrior/ Open the Example

Start the CodeWarrior HC08 IDE by selecting Start > Programs > Metrowerks > CodeWarrior CW08 > CodeWarrior IDE. The CodeWarrior HC08 IDE will open.



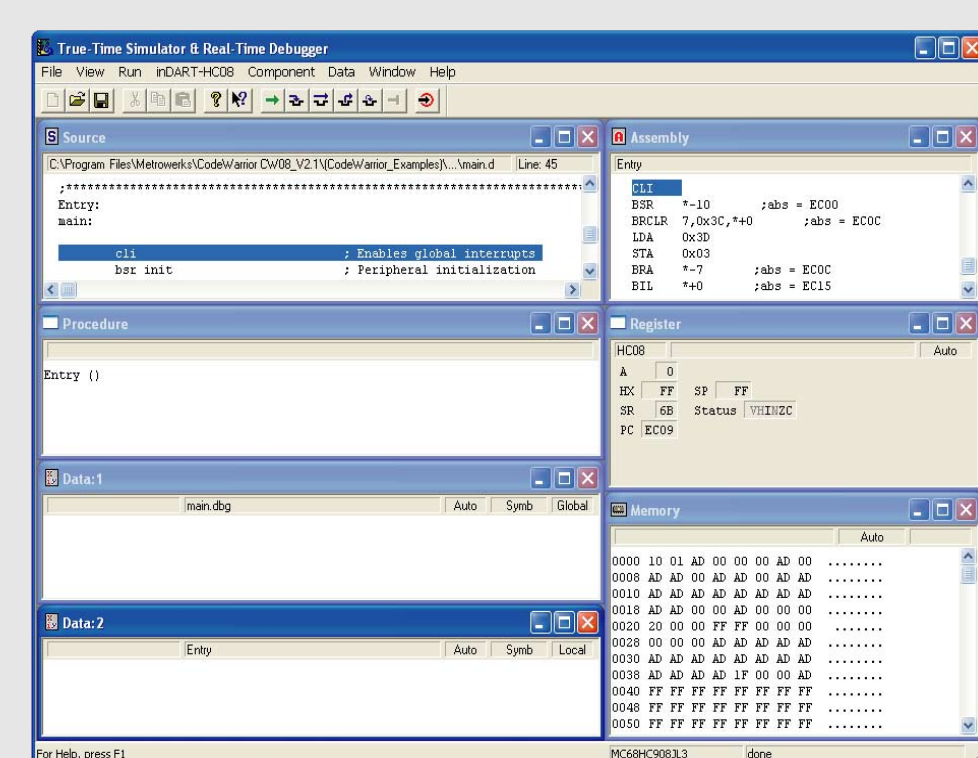
Choose File > Open from the main menu. Select the "Demo.mcp" workspace file that is located under the "(Programs Folder)\Metrowerks\CodeWarrior\CodeWarrior\_Examples\HC08\ SofTec Microsystems\inDART-HC08\ [Target Device]\Asm" directory (where [Target Device] is the device present on the Evaluation Board). Click "Open".

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## Start Debugging Session

Choose Project > Debug from the main menu. This will generate an executable file and will download it to the Evaluation Board.

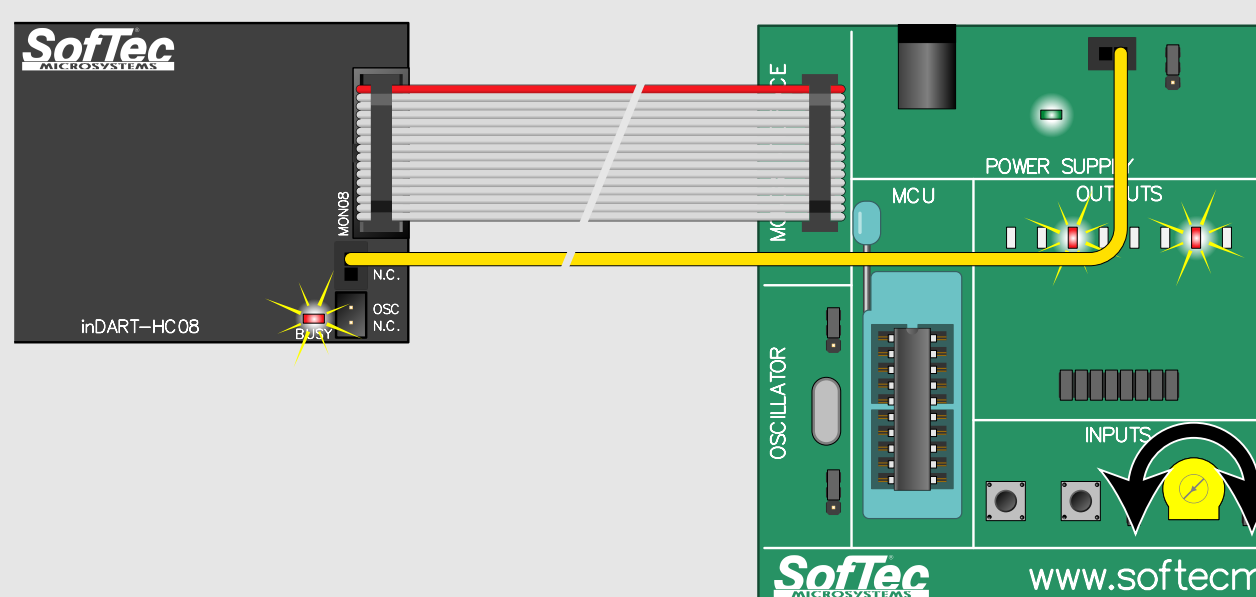
A new debugger environment will open. In the "Source" window, the first line to be executed is highlighted.



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## Run the Example

Choose Run > Start/Continue from the main menu. The program will be executed in real-time. Please note that the "BUSY" LED on the inDART-HC08 unit turns on. By rotating the potentiometer on the demo board, you affect the results of the A/D conversion. The binary value of each conversion is displayed on the LEDs.



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## Congratulations!

You have successfully completed this tutorial! You can now continue to experiment with the CodeWarrior user interface and discover its potentialities (step commands, breakpoints, watch windows, etc.) on your own. Please also read carefully all of the inDART-HC08 documentation, in particular:

- inDART-HC08 User's Manual;
- Evaluation Board's User's Manual;
- Frequently Asked Questions.



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