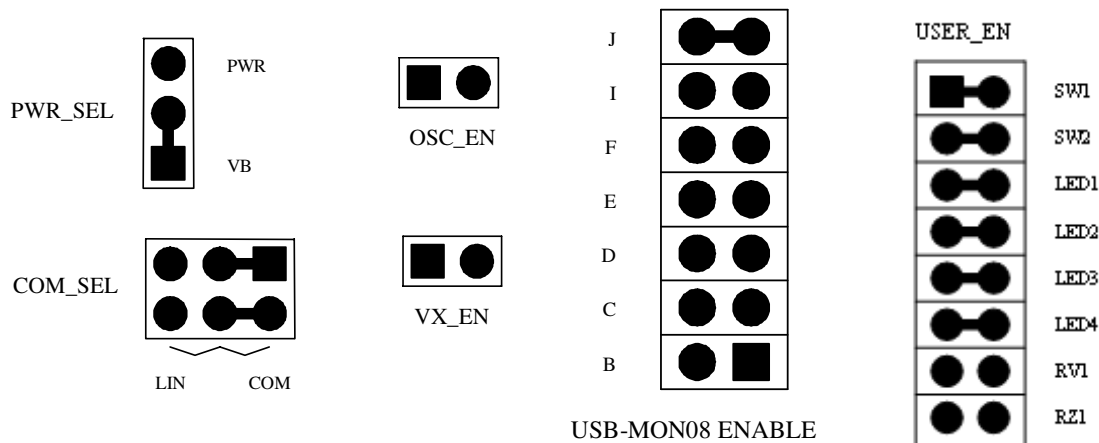# DEMO908QC16 Quick Start Guide

Introduction and Default Settings

This kit contains everything you need to get started. This guide will walk you though how to connect the board to your PC, install the correct version of CodeWarrior Development Studio, run the PWU (periodic wakeup module) test program, and load an ATD (analog-to-digital) test program. Source code for DEMO908QC16_PWU and DEMO908QC16_ATD (ATD test) are provided on the Axiom CD in the "Examples" folder.

Figure 1 illustrates the default settings for the DEMO908QC16 demo board. Please refer to the DEMO908QC16 User's Guide on the Axiom CD for information on other configurations. Black blocks indicate the "on" or "installed" position of jumpers. Please check the settings before continuing.

Figure 1. DEMO908QC16 Default Settings

Install CodeWarrior Development Studio Version 5.0 for HC(S)08

If you do not have version 5.0 of CodeWarrior for HC(S)08 installed on your computer, please refer to the provided "CodeWarrior Development Studio" DVD case and follow the steps in the quick start guide.

Run the DEMO908QC16_PWU Program

The DEMO908QC16 is shipped with the DEMO908QC16_PWU test program stored in on-chip FLASH memory. You may view the source code for this program by accessing the "DEMO908QC16_PWU.zip" file on the Axiom CD (located in the "Examples" folder).

1. Check the jumper settings and make sure they are in the default position. Use Figure 1 as a guide.
2. Connect the USB cable to the PC and then the board. If you are using this board for the first time, please follow the instructions on the screen to install the USB device properly.
3. After the USB drivers are installed correctly, the USB LED, PWR OUT, and +5V LED will be on.

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4. Press the RESET switch and LED1 will flash with a frequency of approximately 500 MHz.
5. Press SW1: LED1 will flash with a frequency of approximately 2 Hz.
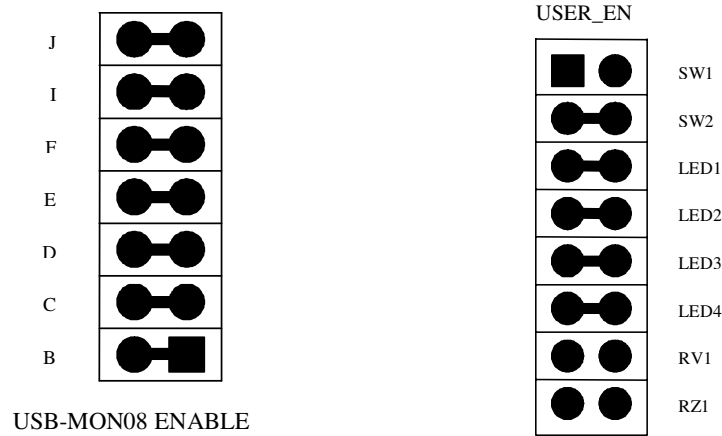6. Press SW2: LED2 will flash with a frequency of approximately 8 Hz.

Figure 2. DEMO908QC16 Debug Settings

Use the USB-MON08 to Install DEMO908C16_ATD Program

The USB-MON08 allows a user to program the MCU FLASH and debug application via USB connection.

1. On the Axiom CD ("Examples" folder), copy the "DEMO908QC16_ATD.zip" file to your PC, open, and extract the files into a working folder on your desktop. **Note:** Be sure to <u>extract</u>, and *not* just copy, the files.
2. Open CodeWarrior HC(S)08 v5.0 and open the "DEMO908QC16_ATD.mcp" project file.
3. Open "DEMO908C16_ATD.c" in the source folder by double clicking on "DEMO908QC16_ATD.c".
4. Unplug the USB cable.
5. Check the jumper settings and make sure they are in the debug position in figure 2.
6. Connect the USB cable. The USB LED, PWR OUT, and +5V LED should be on.
7. Click on "Debug" under Project in the menu bar or hit "F5." The True-Time Simulator & Real-Time Debugger interface window will appear. Please follow the instructions on the screen to complete the Flash programming process.
8. If the "Attempting to contact target and pass security…" window appears, please make sure the following options are configured correctly:
   – **USB-ML-MON08 REF**: DEMO908QC16 on USB1 (Depends on the PC USB Port)
   – **Device Power**: 5 Volts, provided by P&E Interface
   – **Device Clock**: Clock Driven by P&E Interface on Pin 13
   – **Frequency**: 5.000 Mhz
   – **Target MCU Security bytes**: Check the "IGNORE security failure and enter monitor mode" checkbox
9. Click the "Contact target with these settings…" button and follow the instructions on the screen. When the "Erase and Program Flash?" window appears, click the "Yes" button.
10. The "CPROG08SZ Programmer" window should close after the MCU FLASH is programmed. You are now ready to run the DEMO908QC16_ATD code.
11. Install jumper RZ1 on the USER_EN header.
12. Click on the green arrow in the toolbar at the top of the screen to run the program. After you click this button, a message in the command window (bottom right-hand side) should say "RUNNING".
13. LED1 and LED2 will change according to amount of light the photo cell (RZ1) is receiving.

Troubleshooting

+5V LED does not turn on

- Make sure the "PWR_SEL" jumper is in the VB position.
- Install CodeWarrior Development Studio for HC(S)08 v5.0.

Unable to program the part using USB-MON08

- Install CodeWarrior Development Studio for HC(S)08 v5.0.
- Make sure the "PWR_SEL" jumper is in the VB position.
- Make sure all the jumpers on the USB-MON08 ENABLE header are installed. Refer to Figure 2.
- Make sure USER_EN jumpers RV1 and RZ1 are not installed.

Unable to Run the ATD program correctly:

- Make sure USER_EN jumper RZ1 is installed.