APS12OS QUICK START GUIDE

Introduction and Default Settings

The APS12OS is an embedded development module suitable for use in educational environments. This module supports the MC9S12C128, the MC9S12DT256, or the MC9S12XDT512 microcontroller from Freescale. Markings on the topside clearly identify the applied MCU. These MCUs target a variety of automotive applications, featuring support for Byte Data Link Controller (BDLC), CAN, PWM and I2C. The figure below shows the default jumper configuration as shipped from the factory.
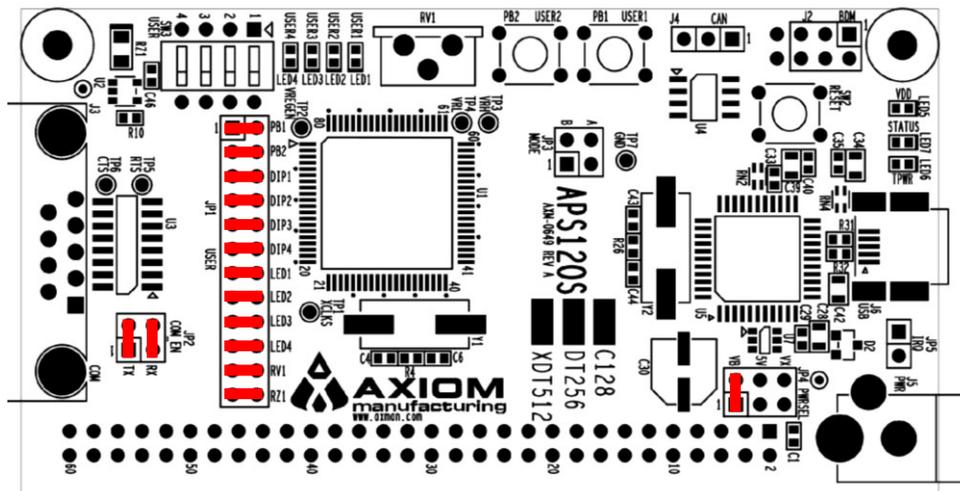

Figure 1: APS12OS Default Option Settings

Integrated OSBDM

The APS12OS board applies the integrated, Open-Source BDM (OSBDM) to provide application development and debug support. The OSBDM may also be used to apply power to the target module; further simplifying development and debug. Users may download CodeWarrior Development Studio for S12(X), Special Edition at no cost from the Freescale web site at www.freescale.com.

Install CodeWarrior Development Studio

CodeWarrior Development Suite for S12(X) Microcontrollers is a comprehensive integrated development environment (IDE) providing a highly visual and automated framework to accelerate software development and debug. The tool suite allows users to get designs up and running quickly.

Web Site: www.axman.com

Support: support@axman.com

To install CodeWarrior, download the software directly from this site CodeWarrior for HSC12(X), or from the Freescale web site. Save the download file to the test PC. Once the download completes, simply double-click on the downloaded file. Follow the on-screen instructions to complete the installation. Most installations will use the default settings.

NOTE:
Install CodeWarrior Development Studio before connecting the target board to the host PC. Otherwise, the necessary USB drivers will not be available and the host PC will not recognize the board.

To Launch the Demo Program:

The APS12OS ships with a demonstration program preloaded into on-chip FLASH memory. The demonstration program exercises several peripherals; including the POT, Push-Button and DIP switches, Light Sensor, and Serial Port.

1. Verify the option jumpers are set in default positions. Refer to Figure 1 above.
2. If necessary, install CodeWarrior Development Studio for S12(X).
3. Connect the included A to mini-B, USB cable between an open USB port on the host PC and the USB connector on the target board. If prompted, follow the on-screen instructions to install the USB drivers.
4. After the OSBDM successfully enumerates, LED5, LED6, and LED7 will turn ON.
5. Rotate the POT fully in both directions. As the POT rotates, the 4 User LEDs should respond by turning ON or OFF. Rotate POT to turn all LEDs off before proceeding.
6. Press SW1 repeatedly, ensure LED1 toggles ON or OFF each time SW1 is pressed. **NOTE:** do not hover near the light sensor at RZ1; otherwise, LED1 may not turn off.
7. Press SW2 repeatedly, ensure LED2 toggles ON or OFF each time SW2 is pressed.
8. Move each DIP SW to the ON position and ensure the associated LED turns ON. Move each DIP SW to the OFF postition and ensure each associated LED turn OFF.
9. Open a terminal window configured at 9600,8,N,1. Ensure keystrokes typed into the terminal window echo on the screen.

    The Quick Start CodeWarrior Project may be downloaded from the Axiom Manufacturing web site at www.axman.com/support.

Troubleshooting

If the demonstration application fails to function as indicated above, please follow the steps below before contacting Freescale Semiconductors. Please refer to the Technical Information Card (TIC) card included in the TWR-S12G128 kit for contact information.

•   Ensure the option jumpers are set to default positions. Refer to Figure 1 above. Specifically, ensure the PWR_SEL option jumper is set correctly.

•   Ensure the correct version of CodeWarrior is installed and that the S12G128 Service Pack is installed if necessary.

•   Ensure sufficient light is applied to the light sensor at RZ1.

•   If keystrokes do not echo in the terminal window, ensure the terminal program is correctly configured, and the serial cable is attached to the COM port. Additionally ensure the COM_SEL jumpers are set properly, refer to Figure 1 above.

If the above Troubleshooting Tips fail to correct the problem, please contact Axiom Manufacturing directly at support@axman.com.