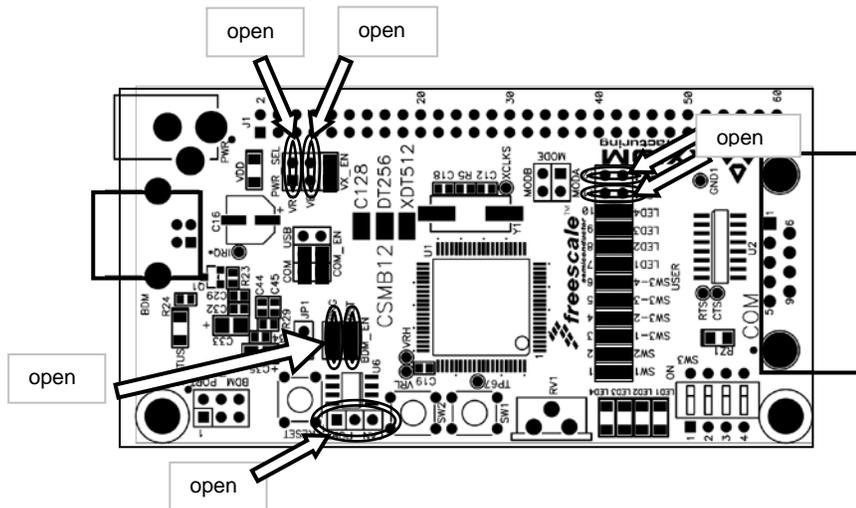


APS12 or CSMB12 module

NOTE 1: The PCB trace near LV1 on the *back* of the module must be cut carefully using a knife. This disables the module's power watchdog circuit.

NOTE 2: For proper use on the ECEbot, the pin locations marked with arrows below should be OPEN. All other pins should have a shorting jumper installed with the indicated orientation.



Standalone FLASH programming using CodeWarrior and USB

Start Codewarrior IDE software on the PC, and load the "ecebot_2008b" project.

Then for each module:

- (1) MOVE THE MODULE'S POWER JUMPER from the "VX_EN" to the "VB" POSITION.
- (2) INSTALL JUMPERS ON BOTH "BDM_EN" POSITIONS.
- (3) Attach the USB cable from the PC to the module's USB connector. The computer should recognize the new hardware and the module's VDD and STATUS lights should come on.
- (4) In CodeWarrior, press the green "debug" button. This will load the "True-Time Simulator & Real-Time Debugger" and automatically erase and reflash the module's memory.
- (5) Close the "True-Time Simulator" window, then UNPLUG the module from the USB cable.
- (6) MOVE THE POWER JUMPER from "VB" back to the "VX_EN" POSITION.
- (7) REMOVE BOTH JUMPERS ON THE "BDM_EN" HEADER.

To program another microcontroller, go back and repeat steps (1) through (7). It is NOT necessary to reset or restart the main CodeWarrior software between each controller.

FLASH programming using CodeWarrior and USB when the module is installed on an ECEbot

Start Codewarrior IDE software on the PC, and load the "ecebot_2008b" project.

- (1) **TURN THE ECEBOT OFF, and LEAVE IT OFF!!**
- (2) MOVE THE CSMB12 POWER JUMPER from the "VX_EN" to the "VB" POSITION.
- (3) INSTALL JUMPERS ON BOTH "BDM_EN" POSITIONS.
- (4) Attach the USB cable from the PC to the module's USB connector. The computer should recognize the new hardware and the module's VDD and STATUS lights should come on.
- (5) In CodeWarrior, press the green "debug" button. This will load the "True-Time Simulator & Real-Time Debugger" and automatically erase and reflash the module.
- (6) Close the "True-Time Simulator" window, then UNPLUG the module from the USB cable.
- (7) MOVE THE POWER JUMPER from "VB" back to the "VX_EN" POSITION.
- (8) REMOVE BOTH JUMPERS FROM THE "BDM_EN" HEADER.