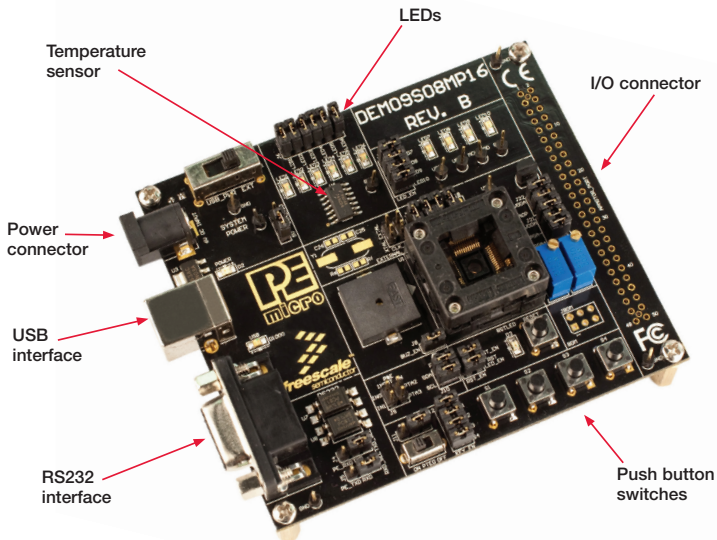


# DEMO9S08MP16

8-bit microcontrollers



# Get to Know the DEMO9S08MP16 Board



\* Socket shown included only on prototype boards.  
On production versions the MCU is soldered.

# Introduction

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The DEMO9S08MP16 is a cost-effective demo platform for evaluating and developing with the Freescale MC9S08MP16. This low-cost 8-bit MCU is designed to deliver smooth, efficient and safe sensorless BLDC motor control across a wide speed range of industrial and automotive applications.

Peripherals include but are not limited to two 16-bit FlexTimers with dead-time insertion and fault protection in hardware, three high-speed analog comparators, a 6-ch., 16-bit PWM module with emergency over-current shutdown protection, a programmable gain amplifier and a 12-ch., 12-bit ADC with PWM hardware triggering. Also included are an independently clocked COP and cyclic redundancy check (CRC) engine delivering CLK failure protection and memory content validation for safety-critical applications.

This quick start guide provides step-by-step guidelines to get you up and running within minutes.

A range of motor control labs for the MC9S08MP16 can be found at **[www.freescale.com/motorcontrol](http://www.freescale.com/motorcontrol)** and on the MC9S08MP16 product family Web page. These labs require the user to purchase the APMOTOR56F8000E BLDC motor control daughter card. This motor control board can be used with the DEMO9S08MP16, DEMO56F8013-EE and MC56F8006DEMO.



**STEP  
1**

## **Install CodeWarrior™ for Microcontrollers Version 6.2**

1. Install CodeWarrior Development Studio for Microcontrollers v6.2
2. Install CodeWarrior Compiler Patch v6.2.2
3. Install Processor Expert Update v3.06
4. Install CodeWarrior Service Pack v6.2 for MC9S08MP16



**STEP  
2**

## **Install P&E resources for the DEMO9S08MP16**

1. DEMO9S08MP16 embedded multilink hardware interface driver
2. DEMO9S08MP16 user manual
3. DEMO9S08MP16 board schematics
4. DEMO9S08MP16 component breakdown list
5. P&E embedded multilink toolkit PC applications
6. P&E evaluation software
7. Links to Freescale documentation, P&E discussion forums and DEMO9S08MP16 FAQs

**STEP  
3****Connecting the  
USB cable**

1. Make sure the power switch for USB\_PWR for VDD\_SEL is installed.
2. Plug the USB cable A-M connector into a free USB port.
3. Plug the USB cable B-M connector into the USB connector on the DEMO9S08MP16 base board.
4. Allow the PC to automatically configure the USB drivers if needed.
5. If the DEMO9S08MP16 hardware interface driver is now properly installed on your system, the green USB LED on the DEMO9S08MP16 base board should be illuminated. In addition, if you turn on the system power of the DEMO9S08MP16 you will see the red power LED illuminate.

**STEP  
4****Explore further with P&E  
embedded multilink  
toolkit applications**

P&E provides several Windows® based applications which work with the DEMO9S08MP16 board. These applications are collectively referred to as the P&E embedded multilink toolkit, which can be found on the P&E resource CD. The following applications are included in the toolkit:

- **Logic Analyzer Application:** built-in two-channel logic analyzer. Allows the IN0 and IN1 signals to be captured by the PC and displayed for the user.
- **Terminal Application:** standard serial port terminal application on the PC. Works with standard serial ports as well as the virtual serial port on the DEMO9S08MP16.
- **Unsecure Application:** allows erasing of a secure device to make it unsecure.
- **Serial Grapher:** allows incoming data on the PC serial port (or one of P&E's virtual serial ports) to be automatically graphed in time or displayed as a series of bar graphs.



## Start Your Development

Congratulations, you have successfully completed this tutorial! We encourage you to continue experimenting with the CodeWarrior user interface. For an in-depth guide of all of the user interface features, select **Help > CodeWarrior Help** from CodeWarrior Development Studio's main menu.



Learn more at [www.freescale.com/motorcontrol](http://www.freescale.com/motorcontrol).

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