

8-bit Microcontrollers

# MC9S08GW

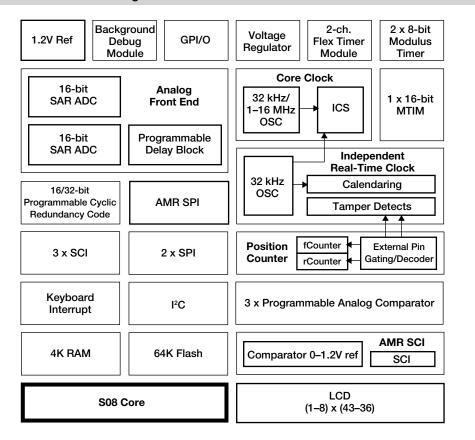
#### Overview

The MC9S08GW is a low-power 8-bit microcontroller family based on the proven S08 core and is designed for use in gas, water and heat flow meters, as well as single-phase electricity meters. Two independent 16-bit SAR ADCs with a programmable delay block and a position counter with automatic flow sensor decoding make this family ideal for a variety of utility metering and industrial applications. In addition, the flexible LCD controller enables it to be highly integrated. The MC9S08GW family comes with a full suite of hardware and software tools to help make development quick and easy, including a cost-effective Tower module for getting started fast.

### **Target Applications**

- Single-phase electricity meters
- Gas, water and heat flow meters
- · Industrial flow measurement and control

### 9S08GW 64/32 Block Diagram





## **Development Tools**

### TWR-S08GW64

Cost-effective development board that is part of the Freescale Tower System, a modular development platform that enables rapid prototyping and re-use through reconfigurable hardware.

### TWR-S08GW64-KIT

Solutions-based development kit includes TWR-S08GW64 controller module, TWR-SER serial module and TWR-ELEV elevator modules.

### CodeWarrior Development Studio for Microcontrollers v10.0

Special Edition Complimentary CodeWarrior Development Studio for Microcontrollers is a single tool suite that supports software development whether it is targeted at Freescale's 8-bit or 32-bit microcontrollers. Designers can further accelerate application development with the help of Processor Expert, which is an awardwinning rapid application development tool integrated into the CodeWarrior tool suite.

| Features   | Benefits  |  |
|--|---|--|
| Low Power and Secure   |   |  |
| Improved low-power S08 core                                  | Helps achieve low power consumption and offers high performance through the entire voltage range                        |  |
| Position counter (pCounter)                                  | Provides automatic sensor decoding and flow counting in low-power modes for longer battery life                         |  |
| Independent real-time clock (iRTC)                           | Runs on battery power supply and 32 kHz crystal, enabling accurate time keeping and calendaring                         |  |
| Tamper detection on iRTC                                     | Ensures physical safety and prevents meter tampering  |  |
| Rich Integration   |   |  |
| Two independent 16-bit SAR ADC with programmable delay block | Enables electricity metering application and provides hardware support for current measurement phase shift compensation |  |
| pCounter with automatic sensor decoding and flow counting    | Enables integration for flow meter applications   |  |
| AMR serial communications port                               | Enables glueless connection for 5V communications modules such as ZigBee® and WiMAX                                     |  |
| Programmable cyclic redundancy check (CRC)                   | Ensures robust metering applications  |  |
| Flexible LCD module  | Provides a full-featured, user-friendly metering solution that supports up to 288 segments                              |  |
| Comprehensive Ecosystem                                      |   |  |
| Single-phase electricity meter reference design              | Provides a complete turnkey solution to shorten time to market  |  |
| Flow meter reference design                                  | Provides a complete solution for gas and water flow meters  |  |
| Low-cost Tower System module                                 | Get started quickly with very little hardware investment  |  |
| CodeWarrior v10.0 support                                    | Develop code faster and easier  |  |

| Package Options |         |               |  |
|-----------------|---------|---------------|--|
| Part Number     | Package | Temp.         |  |
| MC9S08GW64CLH   | 64 LQFP | -40°C to +85° |  |
| MC9S08GW64CLK   | 80 LQFP | -40°C to +85° |  |
| MC9S08GW32CLH   | 64 LQFP | -40°C to +85° |  |
| MC9S08GW32CLK   | 80 LQFP | -40°C to +85° |  |

Learn More:

For current information about Freescale products and documentation, please visit

freescale.com/S08GW.

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