



Flexis 8-bit Microcontrollers

MC9S08JE128/64

Low-cost, ultra-low-power MCU with USB connectivity



Target Applications

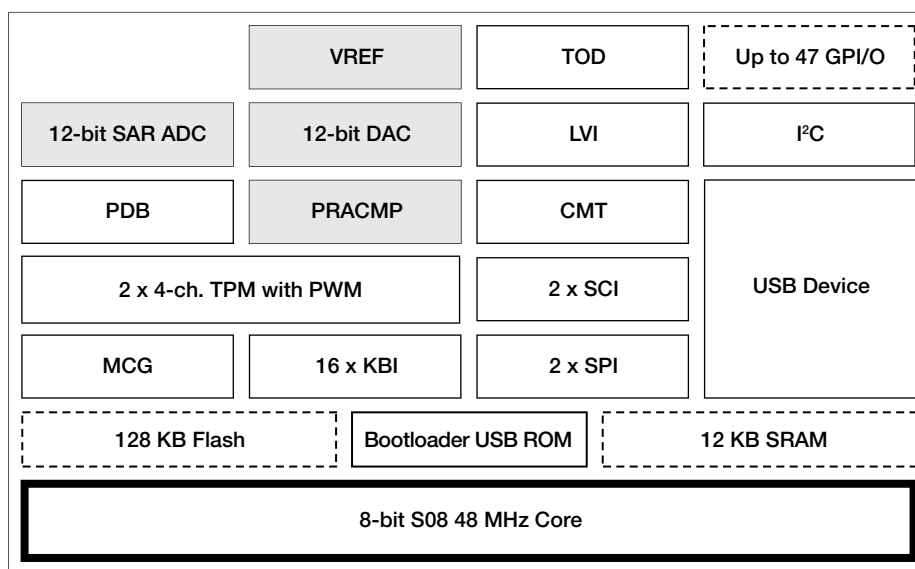
- HVAC building control systems
- PC peripherals
- Lighting control systems
- Industrial networking products
- Portable medical devices

Overview

The MC9S08JE128/64 (JE128/64) provides ultra-low-power operation, USB connectivity and high measurement accuracy, all in a single 8-bit microcontroller, allowing designers to develop a more fully featured system at a lower cost. The JE128/64 integrates high-resolution ADC and DAC modules and a rich peripheral set including a USB 2.0 device controller and multiple serial interfaces.

The JE128/64 is part of the Freescale Flexis microcontroller series, which includes both 8-bit S08 and 32-bit V1 ColdFire microcontrollers that have a common set of peripherals and development tools to deliver the ultimate in migration flexibility. The JE128/64 family is also easy to use. Freescale provides a comprehensive suite of development tools and software to help developers design quickly and easily.

MC9S08JE128 Block Diagram



Modular Tower Development System TWR-S08JE128-KIT (\$119 USD*) TWR-S08JE128 (\$69 USD*)

The Freescale Tower development system provides the user with a modular, reconfigurable demonstration and development platform.

The TWR-S08JE128-KIT soldered with 80LQFP MC9S08JE128 consists of:

- TWR-S08JE128 stand-alone development board
- TWR-SER serial boards that support USB and RS232
- TWR-ELEV elevator board that connects the MCU and serial boards
- USB cable

The TWR-S08JE128 can also be ordered independently. A getting-started DVD included with the board includes necessary software, documents and resources to jumpstart new product development.

CodeWarrior Development Studio for Microcontrollers v6.3/10.x

Special Edition (Complimentary**)

CodeWarrior Development Studio for Microcontrollers is an integrated tool suite that supports software development for Freescale's microcontrollers. Designers can further accelerate application development with the help of the award-winning Processor Expert tool in the CodeWarrior tool suite.

USB Software Stack (Complimentary**)

As other USB MCUs from Freescale, the JE128/64 devices are supported by USB stack with MSD, HID, CDC and PHDC classes. This USB stack can also be used for medical applications.

* Prices indicated are MSRP

** Subject to license agreement

Package Options

Part Number	Temp Ranges (Ta)	Package
MC9S08JE128CMB	-40°C to +85°C	81 MAPBGA
MC9S08JE128CLK	-40°C to +85°C	80 LQFP
MC9S08JE128CLH	-40°C to +85°C	64 LQFP
MC9S08JE64CLH	-40°C to +85°C	64 LQFP
MC9S08JE128VMB	-40°C to +105°C	81 MAPBGA
MC9S08JE128VLK	-40°C to +105°C	80 LQFP
MC9S08JE128VLH	-40°C to +105°C	64 LQFP
MC9S08JE64VLH	-40°C to +105°C	64 LQFP

Features	Benefits
CPU and System Configuration	
8-bit S08 CPU operating at 48 MHz 1.8V to 3.6V single supply	Offers high performance across the entire voltage range
On-Chip Memory	
- Up to 128 KB flash - Up to 12 KB SRAM	- Allows the user to take full advantage of in-application re-programmability benefits in any environment - Security circuitry helps to prevent unauthorized RAM access
Power Management	
Low-power operation modes	- Low-power Stop 2 current—450 nA with 12K of SRAM enabled and active POR 6 μS wake-up time from Stop 3 32 KHz oscillator for low-power time keeping - Rapid response to interrupts from the low-power sleep mode
Analog Related Peripherals	
12-bit ADC 12-bit DAC - Programmable delay block - VREF (voltage reference)	- High-resolution and high-accuracy ADC provides accurate signal acquisition. - Digital to analog converter with clock gating optimized for low power usage - PDB precisely triggers ADC and DAC blocks to complete sensor biasing and measurement (i.e. glucometry strips) - VREF accuracy is 33 ppm /°C
Communication Peripherals	
- USB 2.0 controller - Dual asynchronous SCIs - Inter IC-BUS (I²C) - Dual synchronous SPI (1 x 32-bit FIFO SPI)	- USB device controller - On-chip transceiver and 3.3 volt regulator reduce system cost - Serial communication interface provides a simple, efficient method of data exchange between devices. Option to connect analog comparator to SCI for opto isolation applications - I²C port enables increased system memory by using an additional I²C EEPROM - Having two SPI allows two separate dedicated devices, for example, one SPI dedicated to a ZigBee transceiver and the other to MCUs or peripherals, SPI FIFO allows better performance to drive a graphic LCD
Software and Tools	
- Background debug mode (BDM) for in-circuit debugging - Medical applications USB stack - Tower development system	- Real-time trace and debug support - Standardize with the "Continua Ready" personal health care device (PHDC) USB solution - Tower System is a modular, reconfigurable demonstration and development platform

Learn More:

For current information about Freescale products and documentation, please visit freescale.com/S08JE.