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Flexis 8-bit Microcontrollers

MC9S08JE128/64

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



Target Applications

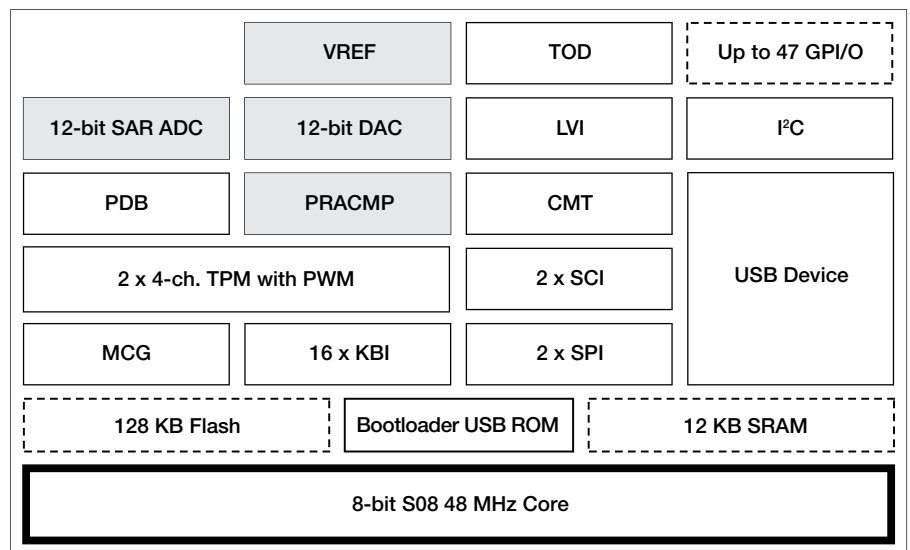
- HVAC building control systems
- PC peripherals
- Lighting control systems
- Industrial networking products
- Portable medical devices

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	
<ul style="list-style-type: none"> 8-bit S08 CPU operating at 48 MHz 1.8V to 3.6V single supply 	<ul style="list-style-type: none"> Offers high performance across the entire voltage range
On-Chip Memory	
<ul style="list-style-type: none"> Up to 128 KB flash Up to 12 KB SRAM 	<ul style="list-style-type: none"> 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	
<ul style="list-style-type: none"> Low-power operation modes 	<ul style="list-style-type: none"> Low-power Stop 2 current—450 nA with 12K of SRAM enabled and active POR 6 uS 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	
<ul style="list-style-type: none"> 12-bit ADC 12-bit DAC Programmable delay block VREF (voltage reference) 	<ul style="list-style-type: none"> 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	
<ul style="list-style-type: none"> USB 2.0 controller Dual asynchronous SCIs Inter IC-BUS (I²C) Dual synchronous SPI <ul style="list-style-type: none"> (1 x 32-bit FIFO SPI) 	<ul style="list-style-type: none"> 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	
<ul style="list-style-type: none"> Background debug mode (BDM) for in-circuit debugging Medical applications USB stack Tower development system 	<ul style="list-style-type: none"> 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.