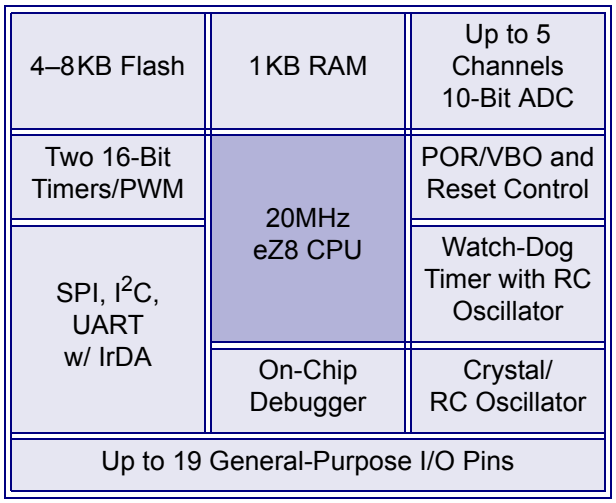
High Performance 8-Bit Microcontrollers

Z8 Encore!® 8K Series MCUs

Product Brief

PB011109-0805

Product Block Diagram



Overview

The Z8 Encore!® 8K Series devices are Flash microcontrollers based on the ZiLOG® eZ8 CPU. The Z8 Encore!® 8K Series MCU devices sets a new standard for performance and on-chip peripherals.

The Z8 Encore!® 8K Series devices support up to 8KB of Flash program memory and 1KB register RAM

The 8K Series devices feature up to five channels of 10-bit A/D conversion for measuring analog signals.

These devices include two enhanced 16-bit timer blocks featuring PWMs and Capture and Compare.

Up to 19 vectored interrupts with programmable priorities provide increased application flexibility.

The new single-pin debugger and programming interface simplifies code development and allows for easy in-circuit programming.

The full-duplex UART provides serial communications and IrDA encoding and decoding capability.

SPI and I2C ports allow easy incorporation into any system.

Features

- 20 MHz eZ8 CPU core
- Up to 8 KB Flash memory with in-circuit programming capability
- 1 KB register RAM
- Optional 2- or 5-channel, 10-bit analog-to-digital converter (ADC)
- Full-duplex 9-bit UART with bus transceiver Driver Enable Control
- I^2C
- Serial peripheral interface (SPI)
- Infrared Data Association (IrDA)-compliant infrared encoder/decoders
- Two 16-bit timers with capture, compare, and PWM capability
- Watch-Dog Timer (WDT) with internal RC oscillator
- 11-19 I/O pins depending upon package
- Up to 19 interrupts with configurable priority
- On-Chip Debugger
- Voltage Brown-out Protection (VBO)
- Power-On Reset (POR)
- Crystal oscillator with three power settings and external RC network option
- 2.7–3.6 V operating voltage with 5 V-tolerant inputs
- 20- and 28-pin packages

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- 0º to +70ºC standard temperature and –40º to +105ºC extended temperature operating ranges

eZ8 CPU Features

- New instructions for improved performance including BIT, BSWAP, BTJ, CPC, LDC, LDCI, LEA, MULT, and SRL
- New instructions support 12-bit linear addressing of the Register File
- Compatible with existing Z8® code
- Up to 10 MIPS operation
- C-Compiler friendly
- 2-9 clock cycles per instruction

Z8 Encore!® 8K Series Development Kit

The Z8 Encore!® 8K Series Development Kit includes the following:

Hardware

- Z8 Encore!® 8K Series Development board
- Smart Cable for PC to Z8 Encore!® 8K Series Development board (DB9 to 6-pin male)
- 5VDC power supply

Software (on CD-ROM)

- ZDS II—Z8 Encore!® IDE with ANSI C-Compiler
- Sample code
- Document Browser
- Acrobat Reader install program

Documentation

- Quick Start Guide
- Registration card
- Z8 Encore!® 8K Series technical documentation (on CD-ROM)

Architecture

Figure 1 illustrates the Z8 Encore!® 8K Series block diagram.

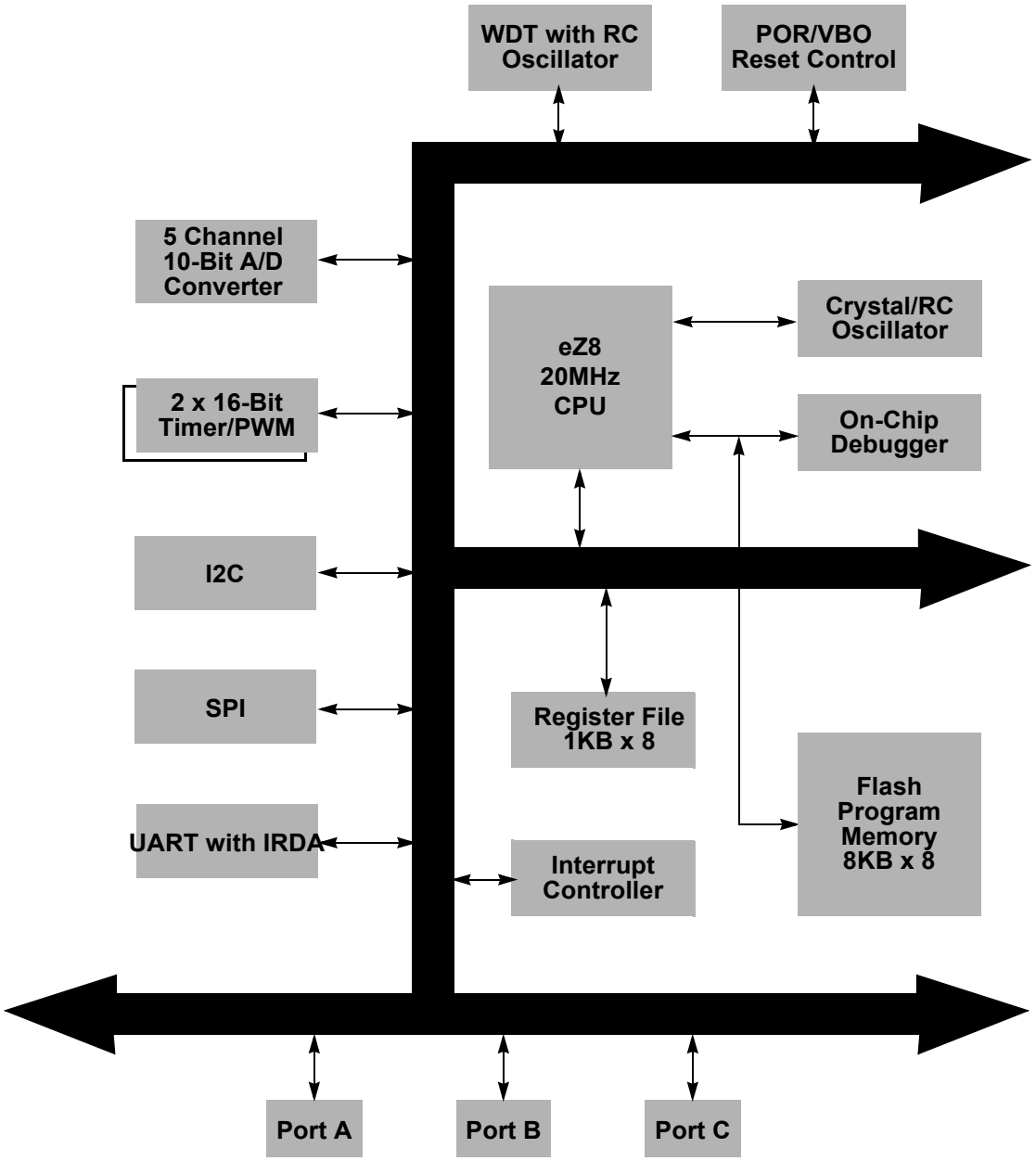


Figure 1. Z8 Encore!® 8K Series Block Diagram

Ordering Information

Order the Z8 Encore!® 8K Series from ZiLOG, referencing the following part numbers. For more information regarding ordering, please consult your local ZiLOG sales office. The ZiLOG website at www.zilog.com lists all regional offices and provides additional Z8 Encore!® product information.

Part Number	Flash	RAM	I/O Lines	Interrupts	16-Bit Timers w/PWM	10-Bit A/D Channels	I^2C	SPI	UARTs with IrDA	Description
Z8F08xx with 8KB Flash, 10-Bit Analog-to-Digital Converter										
Standard Temperature: 0° to 70°C										
Z8F0821HH020SC	8KB	1KB	11	16	2	2	1	0	1	SSOP 20-pin package
Z8F0821PH020SC	8KB	1KB	11	16	2	2	1	0	1	PDIP 20-pin package
Z8F0822SJ020SC	8KB	1KB	19	19	2	5	1	1	1	SOIC 28-pin package
Z8F0822PJ020SC	8KB	1KB	19	19	2	5	1	1	1	PDIP 28-pin package
Extended Temperature: -40° to +105°C										
Z8F0821HH020EC	8KB	1KB	11	16	2	2	1	0	1	SSOP 20-pin package
Z8F0821PH020EC	8KB	1KB	11	16	2	2	1	0	1	PDIP 20-pin package
Z8F0822SJ020EC	8KB	1KB	19	19	2	5	1	1	1	SOIC 28-pin package
Z8F0822PJ020EC	8KB	1KB	19	19	2	5	1	1	1	PDIP 28-pin package
NOTE: Replace C with G for lead-free packaging.										

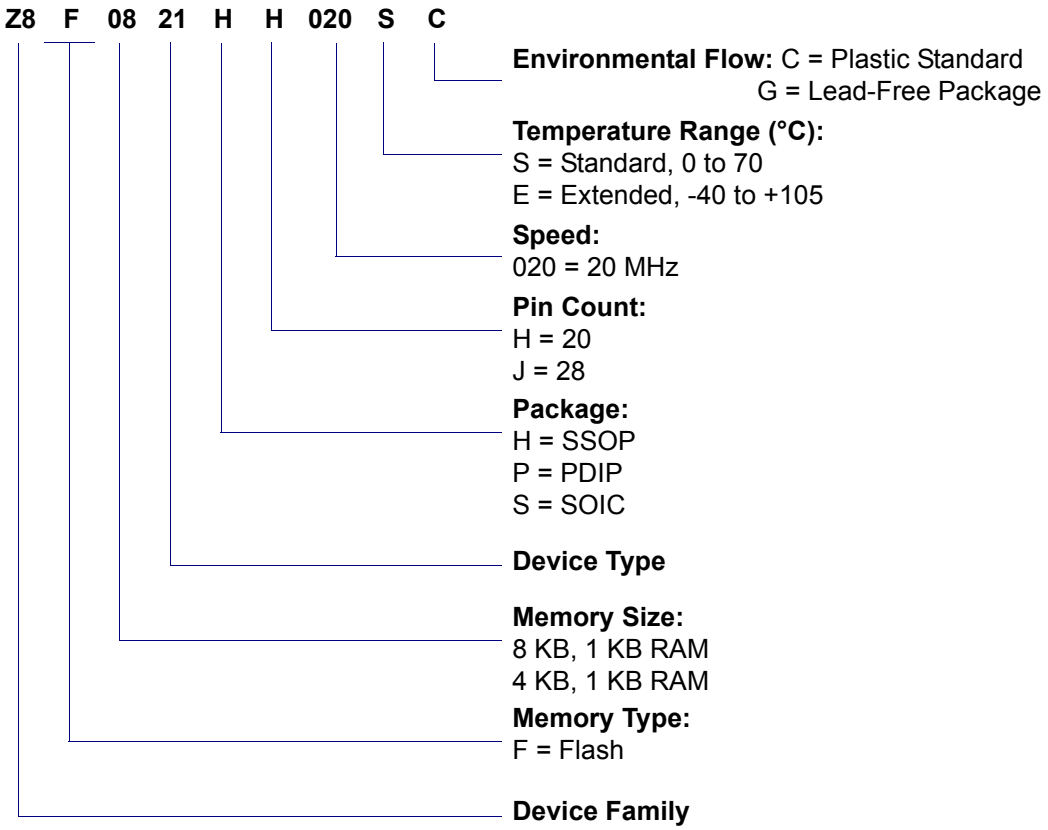
Part Number	Flash	RAM	I/O Lines	Interrupts	16-Bit Timers w/PWM	10-Bit A/D Channels	I^2C	SPI	UARTs with IrDA	Description
Z8F08xx with 8KB Flash										
Standard Temperature: 0° to 70°C										
Z8F0811HH020SC	8KB	1KB	11	16	2	0	1	0	1	SSOP 20-pin package
Z8F0811PH020SC	8KB	1KB	11	16	2	0	1	0	1	PDIP 20-pin package
Z8F0812SJ020SC	8KB	1KB	19	19	2	0	1	1	1	SOIC 28-pin package
Z8F0812PJ020SC	8KB	1KB	19	19	2	0	1	1	1	PDIP 28-pin package
Extended Temperature: -40° to +105°C										
Z8F0811HH020EC	8KB	1KB	11	16	2	0	1	0	1	SSOP 20-pin package
Z8F0811PH020EC	8KB	1KB	11	16	2	0	1	0	1	PDIP 20-pin package
Z8F0812SJ020EC	8KB	1KB	19	19	2	0	1	1	1	SOIC 28-pin package
Z8F0812PJ020EC	8KB	1KB	19	19	2	0	1	1	1	PDIP 28-pin package
NOTE: Replace C with G for lead-free packaging.										

Part Number	Flash	RAM	I/O Lines	Interrupts	16-Bit Timers w/PWM	10-Bit A/D Channels	I^2C	SPI	UARTs with IrDA	Description
Z8F04xx with 4KB Flash, 10-Bit Analog-to-Digital Converter										
Standard Temperature: 0° to 70°C										
Z8F0421HH020SC	4KB	1KB	11	16	2	2	1	0	1	SSOP 20-pin package
Z8F0421PH020SC	4KB	1KB	11	16	2	2	1	0	1	PDIP 20-pin package
Z8F0422SJ020SC	4KB	1KB	19	19	2	5	1	1	1	SOIC 28-pin package
Z8F0422PJ020SC	4KB	1KB	19	19	2	5	1	1	1	PDIP 28-pin package
Extended Temperature: -40° to 105°C										
Z8F0421HH020EC	4KB	1KB	11	16	2	2	1	0	1	SSOP 20-pin package
Z8F0421PH020EC	4KB	1KB	11	16	2	2	1	0	1	PDIP 20-pin package
Z8F0422SJ020EC	4KB	1KB	19	19	2	5	1	1	1	SOIC 28-pin package
Z8F0422PJ020EC	4KB	1KB	19	19	2	5	1	1	1	PDIP 28-pin package
NOTE: Replace C with G for lead-free packaging.										

Part Number	Flash	RAM	I/O Lines	Interrupts	16-Bit Timers w/PWM	10-Bit A/D Channels	I^2C	SPI	UARTs with IrDA	Description
Z8F04xx with 4KB Flash										
Standard Temperature: 0° to 70°C										
Z8F0411HH020SC	4KB	1KB	11	16	2	0	1	0	1	SSOP 20-pin package
Z8F0411PH020SC	4KB	1KB	11	16	2	0	1	0	1	PDIP 20-pin package
Z8F0412SJ020SC	4KB	1KB	19	19	2	0	1	1	1	SOIC 28-pin package
Z8F0412PJ020SC	4KB	1KB	19	19	2	0	1	1	1	PDIP 28-pin package
Extended Temperature: -40° to 105°C										
Z8F0411HH020EC	4KB	1KB	11	16	2	0	1	0	1	SSOP 20-pin package
Z8F0411PH020EC	4KB	1KB	11	16	2	0	1	0	1	PDIP 20-pin package
Z8F0412SJ020EC	4KB	1KB	19	19	2	0	1	1	1	SOIC 28-pin package
Z8F0412PJ020EC	4KB	1KB	19	19	2	0	1	1	1	PDIP 28-pin package
Z8F08200100KIT										Development Kit

NOTE: Replace C with G for lead-free packaging.

Part Number Suffix Designations



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