High Performance 8-Bit Microcontrollers

Z8 Encore! XP® F0822 Series

Product Brief

PB011112-0308

Z8 Encore! XP® Flash Microcontrollers

Overview

Zilog's Z8 Encore! XP® F0822 Series devices are Flash microcontrollers based on Zilog's eZ8™ CPU. Z8 Encore! XP F0822 Series devices set a new standard for performance and On-Chip peripherals.

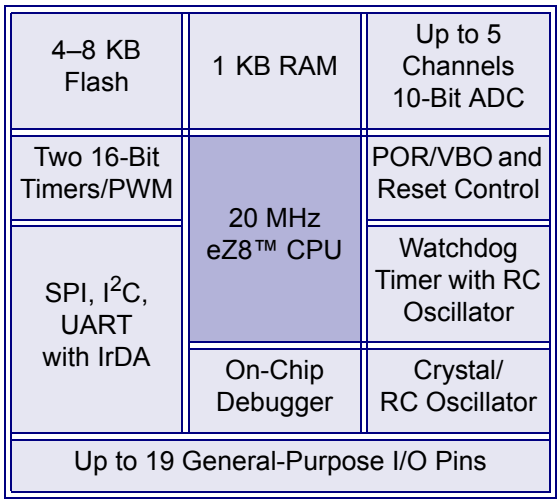
Z8 Encore! XP F0822 Series devices support up to 8 KB of Flash Program Memory and 1 KB register RAM. The F0822 Series devices feature up to five channels of 10-bit analog-to-digital conversion for measuring analog signals. These devices include two enhanced 16-bit timer blocks featuring PWMs and Capture 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 I^2C ports allow easy incorporation into any system.

Product Block Diagram



Features

Key features of Z8 Encore! XP F0822 Series include:

- 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 ports
- Serial Peripheral Interface (SPI)
- Infrared Data Association (IrDA)-compliant infrared encoder/decoders
- Two 16-bit timers with capture, compare, and PWM capability
- Watchdog Timer (WDT) with internal RC oscillator
- 11 to 9 I/O pins depending upon package
- Up to 19 interrupts with configurable priority
- On-Chip Debugger (OCD)
- Voltage Brownout (VBO) protection
- Power-On Reset (POR)
- Crystal oscillator with three power settings and external RC network option
- 2.7 V to 3.6 V operating voltage with 5 V-tolerant inputs
- 20-/28-pin packages
- 0 ºC to +70 ºC standard temperature and –40 ºC to +105 ºC extended temperature operating ranges

eZ8™ CPU Features

Key features of eZ8 CPU include:

- 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 to 9 clock cycles per instruction

Z8 Encore! XP® F0822 Series Development Kit

Z8 Encore! XP F0822 Series Development Kit includes the following:

Hardware

The hardware components include:

- Z8 Encore! XP F0822 Series development board
- Smart Cable
- 5 V DC power supply

Software (on CD-ROM)

The software components on the CD-ROM include:

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

Documentation

The documentation include:

- Quick Start Guide
- Z8 Encore! XP F0822 Series technical documentation (on CD-ROM)

Architecture

Figure 1 displays the Z8 Encore! XP® F0822 Series block diagram.

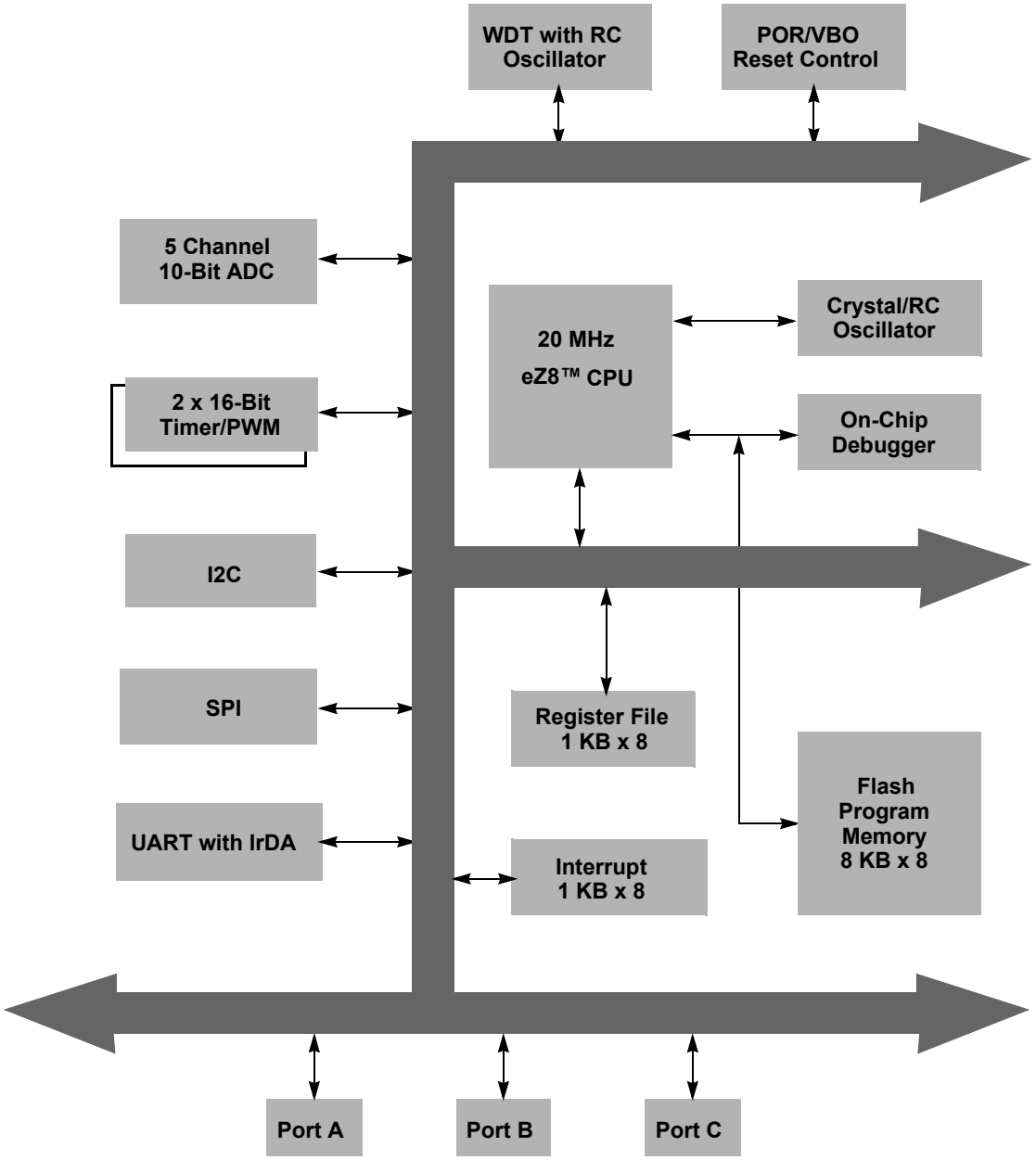


Figure 1. Z8 Encore! XP® F0822 Series Block Diagram

Ordering Information

Order Z8 Encore! XP® F0822 Series from Zilog®, using the following part numbers. For more information regarding ordering, consult your local Zilog sales office. Zilog website www.zilog.com lists all regional offices and provides additional Z8 Encore! XP 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 8 KB Flash, 10-Bit Analog-to-Digital Converter										
Standard Temperature: 0 °C to 70 °C										
Z8F0821HH020SC	8 KB	1 KB	11	16	2	2	1	0	1	SSOP 20-pin package
Z8F0821PH020SC	8 KB	1 KB	11	16	2	2	1	0	1	PDIP 20-pin package
Z8F0822SJ020SC	8 KB	1 KB	19	19	2	5	1	1	1	SOIC 28-pin package
Z8F0822PJ020SC	8 KB	1 KB	19	19	2	5	1	1	1	PDIP 28-pin package
Extended Temperature: -40 °C to +105 °C										
Z8F0821HH020EC	8 KB	1 KB	11	16	2	2	1	0	1	SSOP 20-pin package
Z8F0821PH020EC	8 KB	1 KB	11	16	2	2	1	0	1	PDIP 20-pin package
Z8F0822SJ020EC	8 KB	1 KB	19	19	2	5	1	1	1	SOIC 28-pin package
Z8F0822PJ020EC	8 KB	1 KB	19	19	2	5	1	1	1	PDIP 28-pin package

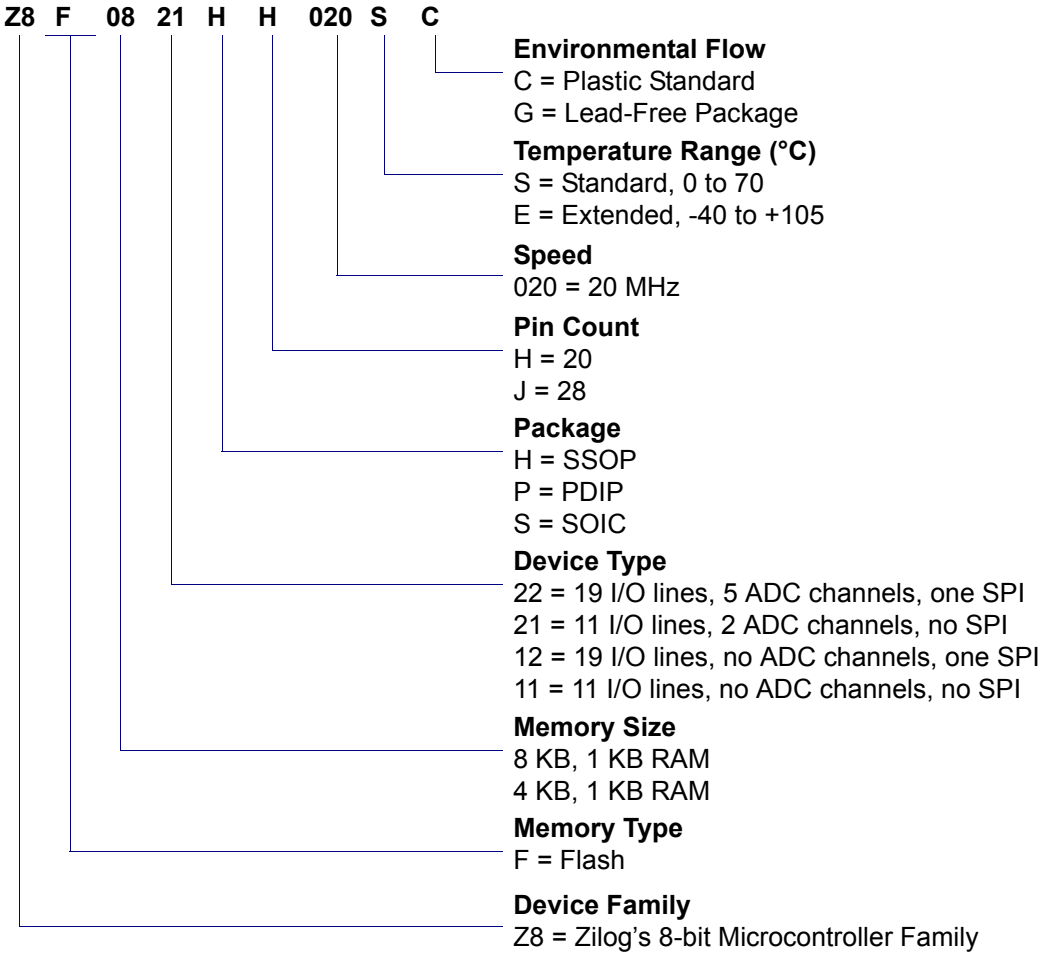
Part Number	Flash	RAM	I/O Lines	Interrupts	16-Bit Timers w/PWM	10-Bit A/D Channels	I^2C	SPI	UARTs with IrDA	Description
Z8F08xx with 8 KB Flash										
Standard Temperature: 0 °C to 70 °C										
Z8F0811HH020SC	8 KB	1 KB	11	16	2	0	1	0	1	SSOP 20-pin package
Z8F0811PH020SC	8 KB	1 KB	11	16	2	0	1	0	1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

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 4 KB Flash, 10-Bit Analog-to-Digital Converter										
Standard Temperature: 0 °C to 70 °C										
Z8F0421HH020SC	4 KB	1 KB	11	16	2	2	1	0	1	SSOP 20-pin package
Z8F0421PH020SC	4 KB	1 KB	11	16	2	2	1	0	1	PDIP 20-pin package
Z8F0422SJ020SC	4 KB	1 KB	19	19	2	5	1	1	1	SOIC 28-pin package
Z8F0422PJ020SC	4 KB	1 KB	19	19	2	5	1	1	1	PDIP 28-pin package
Extended Temperature: -40 °C to 105 °C										
Z8F0421HH020EC	4 KB	1 KB	11	16	2	2	1	0	1	SSOP 20-pin package
Z8F0421PH020EC	4 KB	1 KB	11	16	2	2	1	0	1	PDIP 20-pin package
Z8F0422SJ020EC	4 KB	1 KB	19	19	2	5	1	1	1	SOIC 28-pin package
Z8F0422PJ020EC	4 KB	1 KB	19	19	2	5	1	1	1	PDIP 28-pin package

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 4 KB Flash										
Standard Temperature: 0 °C to 70 °C										
Z8F0411HH020SC	4 KB	1 KB	11	16	2	0	1	0	1	SSOP 20-pin package
Z8F0411PH020SC	4 KB	1 KB	11	16	2	0	1	0	1	PDIP 20-pin package
Z8F0412SJ020SC	4 KB	1 KB	19	19	2	0	1	1	1	SOIC 28-pin package
Z8F0412PJ020SC	4 KB	1 KB	19	19	2	0	1	1	1	PDIP 28-pin package
Extended Temperature: -40 °C to 105 °C										
Z8F0411HH020EC	4 KB	1 KB	11	16	2	0	1	0	1	SSOP 20-pin package
Z8F0411PH020EC	4 KB	1 KB	11	16	2	0	1	0	1	PDIP 20-pin package
Z8F0412SJ020EC	4 KB	1 KB	19	19	2	0	1	1	1	SOIC 28-pin package
Z8F0412PJ020EC	4 KB	1 KB	19	19	2	0	1	1	1	PDIP 28-pin package
Z8F08200100KITG										Z8 Encore! XP® F0822 Development Kit
ZUSBSC00100ZACG										USB Smart Cable Accessory Kit
ZUSBOPTSC01ZACG										Opto-Isolated USB Smart Cable Accessory Kit
ZENETSC0100ZACG										Ethernet Smart Cable Accessory Kit

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

Part Number Suffix Designations



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As used herein

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