



Z i L O G

# Z8F320x Series



## Advanced 20MHz 32KB Flash Microcontroller

PB009311-0903

Product Brief

### Product Block Diagram

20MHz eZ8 CPU	12 Channel 10-bit ADC	
32KB Flash	3 to 4 16-bit Counter/Timers Capture/Compare/PWM	
2KB SRAM	Watch-Dog Timer	Crystal Oscillator & Reset Control
SPI, I <sup>2</sup> C, Two UARTs with IrDA	On-Chip Debugger	
Up to 46 I/O Pins		

### Overview

The Z8F320x series of devices are Flash microcontrollers based on ZiLOG's advanced eZ8 8-bit microprocessor core. The Z8 Encore!® MCU family of devices sets a new standard for performance and on-chip peripherals.

The Z8F320x series features up to twelve channels of 10-bit A/D conversion for measuring analog signals.

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

Up to 24 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.

Two full-duplex UARTs provide serial communications and IrDA encoding and decoding capability. SPI and I<sup>2</sup>C ports allow easy incorporation into any system.

### Z8 Encore!® MCU Features

- 20MHz ZiLOG eZ8 microprocessor core
- 32KB Flash program memory
- 2KB register RAM
- Up to twelve channels, 10-bit A/D conversion
- 3 or 4 enhanced 16-bit timer blocks with PWMs and Capture and Compare. The 40- and 44-pin packages feature only 3 timers. The fourth timer is available only in the 64-, and 68-pin packages.
- Full-duplex SPI, I<sup>2</sup>C, and two UART ports with IrDA encoder/decoders.
- Up to 46 available I/O pins
- 3-channel DMA controller
- On-chip debug with break and trap capability
- Single-pin Flash programming
- Watch-Dog Timer
- Up to 24 vectored interrupts
- Power-on reset and voltage brown-out
- 3.0 to 3.6 operating voltage with 5V-tolerant inputs
- Operating temperatures: Standard (0° to 70°C) and Extended (-40° to +105°C)
- 40-, 44-, 64- and 68-pin packages



## eZ8 Microprocessor 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<sup>®</sup> code
- Up to 10 MIPS operation
- C-Compiler friendly
- 2-9 clock cycles per instruction

## Z8 Encore!<sup>®</sup> Development Kit

The Z8 Encore!<sup>®</sup> Development Kit includes the following:

### Hardware

- Z8 Encore!<sup>®</sup> Evaluation board
- 9VDC universal power supply
- RS-232 DB9 serial cable
- Z8 Encore!<sup>®</sup> target interface module

### Software

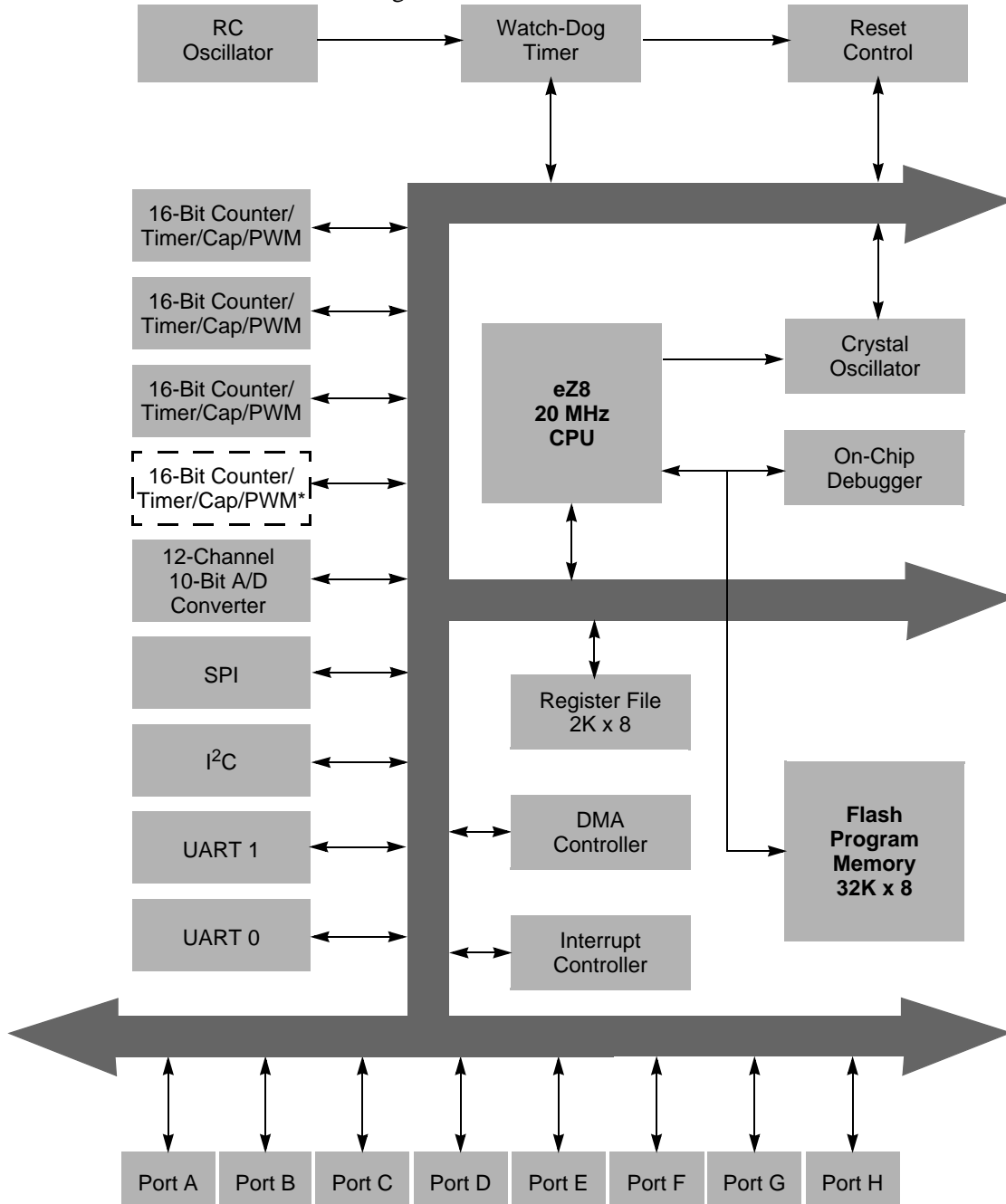
- ZDS II - Z8 Encore!<sup>®</sup> IDE with ANSI C-Compiler
- Sample code

## Documentation

- Quick Start Guide
- Registration card
- Z8 Encore!<sup>®</sup> technical documentation (on CD-ROM):
  - Development Kit User Manual
  - ZDS II - IDE User Manual
  - eZ8 CPU User Manual
  - Product specifications
  - Product briefs
  - Application notes
  - Programmer's Reference Sheet
  - Flyer
  - Selector guide

## Architecture

Figure 1 illustrates the Z8F320x block diagram.



\* The 40- and 44-pin packages feature only 3 timers. The fourth timer is unavailable.

**Figure 1. Z8F320x Block Diagram**



## Ordering Information

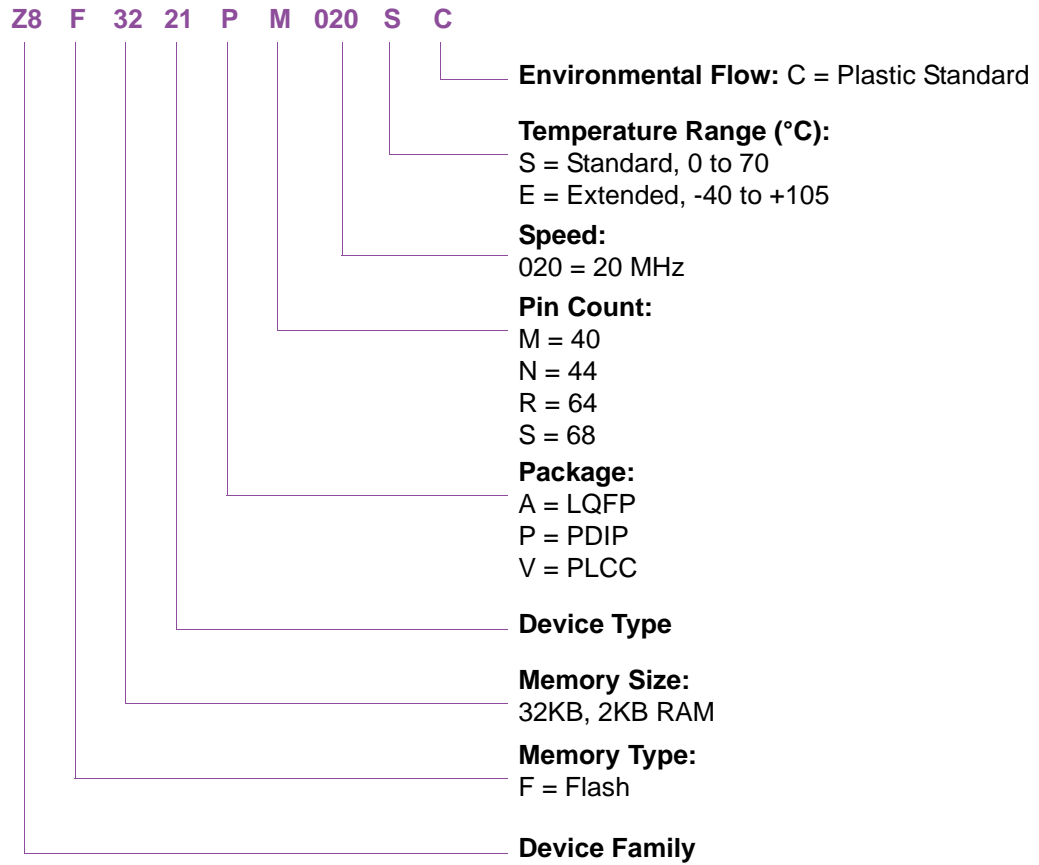
Order the Z8F320x series from ZiLOG, referencing the following part numbers. For more information regarding ordering, please consult your local

ZiLOG sales office. The ZiLOG website at [www.zilog.com](http://www.zilog.com) lists all regional offices, as well as additional Z8 Encore!<sup>®</sup> product information.

Part Number	Flash	RAM	I/O Lines	Interrupts	16-Bit Timers with PWM	10-Bit A/D Channels	I <sup>2</sup> C	SPI	UARTs with IrDA	Description
Standard Temperature: 0° to 70°C										
Z8F3201PM020SC	32KB	2KB	31	23	3	8	1	1	2	PDIP 40-pin package
Z8F3201AN020SC	32KB	2KB	31	23	3	8	1	1	2	LQFP 44-pin package
Z8F3201VN020SC	32KB	2KB	31	23	3	8	1	1	2	PLCC 44-pin package
Z8F3202AR020SC	32KB	2KB	46	24	4	12	1	1	2	LQFP 64-pin package
Z8F3202VS020SC	32KB	2KB	46	24	4	12	1	1	2	PLCC 68-pin package
Extended Temperature: -40° to 105°C										
Z8F3201PM020EC	32KB	2KB	31	23	3	8	1	1	2	PDIP 40-pin package
Z8F3201AN020EC	32KB	2KB	31	23	3	8	1	1	2	LQFP 44-pin package
Z8F3201VN020EC	32KB	2KB	31	23	3	8	1	1	2	PLCC 44-pin package
Z8F3202AR020EC	32KB	2KB	46	24	4	12	1	1	2	LQFP 64-pin package
Z8F3202VS020EC	32KB	2KB	46	24	4	12	1	1	2	PLCC 68-pin package
Z8ENCORE000ZCO										Development Kit



## Part Number Suffix Designations





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