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What is "[Embedded - Microcontrollers](#)"?

"[Embedded - Microcontrollers](#)" refer to small, integrated circuits designed to perform specific tasks within larger systems. These microcontrollers are essentially compact computers on a single chip, containing a processor core, memory, and programmable input/output peripherals. They are called "embedded" because they are embedded within electronic devices to control various functions, rather than serving as standalone computers. Microcontrollers are crucial in modern electronics, providing the intelligence and control needed for a wide range of applications.

Applications of "[Embedded - Microcontrollers](#)"

Details

| | |
|----------------------------|---|
| Product Status | Active |
| Core Processor | eZ8 |
| Core Size | 8-Bit |
| Speed | 20MHz |
| Connectivity | IrDA, UART/USART |
| Peripherals | Brown-out Detect/Reset, LED, LVD, POR, PWM, Temp Sensor, WDT |
| Number of I/O | 23 |
| Program Memory Size | 2KB (2K x 8) |
| Program Memory Type | FLASH |
| EEPROM Size | 64 x 8 |
| RAM Size | 512 x 8 |
| Voltage - Supply (Vcc/Vdd) | 2.7V ~ 3.6V |
| Data Converters | A/D 8x10b |
| Oscillator Type | Internal |
| Operating Temperature | 0°C ~ 70°C (TA) |
| Mounting Type | Through Hole |
| Package / Case | 28-DIP (0.600", 15.24mm) |
| Supplier Device Package | 28-PDIP |
| Purchase URL | https://www.e-xfl.com/product-detail/zilog/z8f022apj020sg2156 |

High-Performance 8-Bit Microcontrollers

Z8 Encore! XP[®] F082A Series

Product Brief

PB013612-0508

Product Block Diagram

| | | |
|-----------------------------------|-----------------------------------|-------------------------------|
| 1 KB, 2 KB, 4 KB, or 8 KB Flash | 256 B, 512 B, or 1 KB RAM | Up to 8 Channels 10-Bit ADC |
| Two 16-Bit Timers/PWM | 20 MHz eZ8[™] CPU | Up to 128 B NVDS* |
| Watchdog Timer with RC Oscillator | | POR/VBO and Reset Control |
| UART with IrDA | On-Chip Debugger | Crystal/RC Oscillator |
| Temperature Sensor | Analog Comparator | Internal Precision Oscillator |
| 6 to 25 General-Purpose I/O Pins | | |

* The NVDS feature is not available for devices with 8 KB Flash.

Overview

Zilog's Z8 Encore! XP[®] F082A Series Flash Microcontrollers are based on Zilog's 8-bit eZ8 CPU core. The Z8 Encore! XP F082A Series Flash Microcontrollers set a new standard for performance and on-chip peripherals.

This Series features 1 KB, 2 KB, 4 KB or 8 KB of non-volatile Flash memory with read/write/erase capability and 256 B to 1 KB of register RAM.

The Z8 Encore! XP F082A Series Flash Microcontrollers feature an 8-channel, 10-bit Analog-to-Digital Converter (ADC). The ADC accepts inputs from eight different analog input pins in both single-ended and differential modes. The Low-Power Operational Amplifier (LPO) is a general-purpose amplifier for current sense applications. An on-

chip temperature sensor allows die temperature measurement over a range of -40 °C to +105 °C.

These devices include two enhanced 16-bit timers with capture, compare, and PWM capabilities. Up to 20 vectored interrupts with three levels of programmable priorities provide increased application flexibility.

The Z8 Encore! XP F082A Series features an on-chip Internal Precision Oscillator (IPO). The IPO (5 MHz/32 kHz) is a trimmed clock source that requires no external components.

The new single-pin On-Chip Debugger (OCD) and programming interface simplifies code development and allows easy in-circuit programming.

The full-duplex Universal Asynchronous Receiver/Transmitter (UART) provides serial communications and Infrared Data Association (IrDA) encoding and decoding capability. The UART Baud Rate Generator (BRG) can be configured and used as a basic 16-bit timer.

Features

Key features of Z8 Encore! XP F082A Series include:

- 20 MHz eZ8 CPU core
- 1 KB, 2 KB, 4 KB or 8 KB Flash memory with in-circuit programming capability
- 256 B, 512 B or 1 KB register RAM
- Up to 128 B Non-Volatile Data Storage (NVDS)
- Up to 8 channels 10-bit ADC
- On-chip Temperature Sensor
- On-chip Analog Comparator

- On-chip Low-Power Operational Amplifier
- Full-duplex 9-bit UART with bus transceiver Driver Enable Control
- IrDA-compliant infrared encoder/decoders
- Two 16-bit timers with capture, compare, and PWM capabilities
- Watchdog Timer (WDT) with internal RC Oscillator
- 6 to 25 General-Purpose I/O pins depending upon package
- Up to 20 interrupts with configurable priority
- On-Chip Debugger
- Voltage Brownout Protection (VBO)
- Power-On Reset (POR)
- Internal Precision Oscillator (5 MHz/32 kHz)
- 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
- 8-pin, 20-pin, and 28-pin packages
- 0 °C to +70 °C (standard temperature) and –40 °C to +105 °C (extended temperature) operating ranges

eZ8[™] CPU Features

Zilog's latest 8-bit eZ8 CPU features include:

- New instructions for improved performance including BIT, BSWAP, BTJ, CPC, LDC, LDCl, 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

Development Kit

The Z8 Encore! XP[®] F082A Series development kit includes:

Hardware

- Z8 Encore! XP F082A Series Development Board
- Smart Cable for PC to Z8 Encore! XP F082A Series Development Board (20-pin and 28-pin kits)
- 5 V DC power supply

Software on CD-ROM

- ZDS II–Z8 Encore![®] IDE with ANSI C-Compiler, available for free download at www.zilog.com
- Sample Code
- Document Browser
- Acrobat Reader[®]

Documentation

- Quick Start Guide
- Z8 Encore! XP F082A Series technical documentation (on CD-ROM):
 - Development Kit User Manual
 - ZDS II IDE User Manual
 - eZ8[™] CPU User Manual
 - Product Specification
 - Product Brief

Architecture

Figure 1 displays the Z8 Encore! XP[®] F082A Series architecture.



Figure 1. Z8 Encore! XP F082A Series Architecture

Ordering Information

You can order the Z8 Encore! XP[®] F082A Series from Zilog[®], using the following part numbers. For more information regarding ordering, contact your local Zilog sales office. The Zilog website (www.zilog.com) lists all regional offices and provides additional Z8 Encore! XP product information.

| Part Number | Flash | RAM | NVDS | I/O Lines | Interrupts | 16-Bit Timers w/PWM | 10-Bit A/D Channels | UART with IrDA | Comparator | Temperature Sensor | Description |
|---|-------|------|------|-----------|------------|---------------------|---------------------|----------------|------------|--------------------|---------------------|
| Z8 Encore! XP F082A Series with 8 KB Flash, 10-Bit Analog-to-Digital Converter | | | | | | | | | | | |
| Standard Temperature: 0 °C to +70 °C | | | | | | | | | | | |
| Z8F082APB020SC | 8 KB | 1 KB | 0 | 6 | 14 | 2 | 4 | 1 | 1 | 1 | PDIP 8-pin package |
| Z8F082AQB020SC | 8 KB | 1 KB | 0 | 6 | 14 | 2 | 4 | 1 | 1 | 1 | QFN 8-pin package |
| Z8F082ASB020SC | 8 KB | 1 KB | 0 | 6 | 14 | 2 | 4 | 1 | 1 | 1 | SOIC 8-pin package |
| Z8F082ASH020SC | 8 KB | 1 KB | 0 | 17 | 20 | 2 | 7 | 1 | 1 | 1 | SOIC 20-pin package |
| Z8F082AHH020SC | 8 KB | 1 KB | 0 | 17 | 20 | 2 | 7 | 1 | 1 | 1 | SSOP 20-pin package |
| Z8F082APH020SC | 8 KB | 1 KB | 0 | 17 | 20 | 2 | 7 | 1 | 1 | 1 | PDIP 20-pin package |
| Z8F082ASJ020SC | 8 KB | 1 KB | 0 | 23 | 20 | 2 | 8 | 1 | 1 | 1 | SOIC 28-pin package |
| Z8F082AHJ020SC | 8 KB | 1 KB | 0 | 23 | 20 | 2 | 8 | 1 | 1 | 1 | SSOP 28-pin package |
| Z8F082APJ020SC | 8 KB | 1 KB | 0 | 23 | 20 | 2 | 8 | 1 | 1 | 1 | PDIP 28-pin package |
| Extended Temperature: –40 °C to +105 °C | | | | | | | | | | | |
| Z8F082APB020EC | 8 KB | 1 KB | 0 | 6 | 14 | 2 | 4 | 1 | 1 | 1 | PDIP 8-pin package |
| Z8F082AQB020EC | 8 KB | 1 KB | 0 | 6 | 14 | 2 | 4 | 1 | 1 | 1 | QFN 8-pin package |
| Z8F082ASB020EC | 8 KB | 1 KB | 0 | 6 | 14 | 2 | 4 | 1 | 1 | 1 | SOIC 8-pin package |
| Z8F082ASH020EC | 8 KB | 1 KB | 0 | 17 | 20 | 2 | 7 | 1 | 1 | 1 | SOIC 20-pin package |
| Z8F082AHH020EC | 8 KB | 1 KB | 0 | 17 | 20 | 2 | 7 | 1 | 1 | 1 | SSOP 20-pin package |
| Z8F082APH020EC | 8 KB | 1 KB | 0 | 17 | 20 | 2 | 7 | 1 | 1 | 1 | PDIP 20-pin package |
| Z8F082ASJ020EC | 8 KB | 1 KB | 0 | 23 | 20 | 2 | 8 | 1 | 1 | 1 | SOIC 28-pin package |
| Z8F082AHJ020EC | 8 KB | 1 KB | 0 | 23 | 20 | 2 | 8 | 1 | 1 | 1 | SSOP 28-pin package |
| Z8F082APJ020EC | 8 KB | 1 KB | 0 | 23 | 20 | 2 | 8 | 1 | 1 | 1 | PDIP 28-pin package |
| Note: Replace C with G for Lead-Free Packaging | | | | | | | | | | | |

| Part Number | Flash | RAM | NVDS | I/O Lines | Interrupts | 16-Bit Timers w/PWM | 10-Bit A/D Channels | UART with IrDA | Comparator | Temperature Sensor | Description |
|---|-------|------|------|-----------|------------|---------------------|---------------------|----------------|------------|--------------------|---------------------|
| Z8 Encore! XP F082A Series with 8 KB Flash | | | | | | | | | | | |
| Standard Temperature: 0 °C to +70 °C | | | | | | | | | | | |
| Z8F081APB020SC | 8 KB | 1 KB | 0 | 6 | 13 | 2 | 0 | 1 | 1 | 0 | PDIP 8-pin package |
| Z8F081AQB020SC | 8 KB | 1 KB | 0 | 6 | 13 | 2 | 0 | 1 | 1 | 0 | QFN 8-pin package |
| Z8F081ASB020SC | 8 KB | 1 KB | 0 | 6 | 13 | 2 | 0 | 1 | 1 | 0 | SOIC 8-pin package |
| Z8F081ASH020SC | 8 KB | 1 KB | 0 | 17 | 19 | 2 | 0 | 1 | 1 | 0 | SOIC 20-pin package |
| Z8F081AHH020SC | 8 KB | 1 KB | 0 | 17 | 19 | 2 | 0 | 1 | 1 | 0 | SSOP 20-pin package |
| Z8F081APH020SC | 8 KB | 1 KB | 0 | 17 | 19 | 2 | 0 | 1 | 1 | 0 | PDIP 20-pin package |
| Z8F081ASJ020SC | 8 KB | 1 KB | 0 | 25 | 19 | 2 | 0 | 1 | 1 | 0 | SOIC 28-pin package |
| Z8F081AHJ020SC | 8 KB | 1 KB | 0 | 25 | 19 | 2 | 0 | 1 | 1 | 0 | SSOP 28-pin package |
| Z8F081APJ020SC | 8 KB | 1 KB | 0 | 25 | 19 | 2 | 0 | 1 | 1 | 0 | PDIP 28-pin package |
| Extended Temperature: –40 °C to +105 °C | | | | | | | | | | | |
| Z8F081APB020EC | 8 KB | 1 KB | 0 | 6 | 13 | 2 | 0 | 1 | 1 | 0 | PDIP 8-pin package |
| Z8F081AQB020EC | 8 KB | 1 KB | 0 | 6 | 13 | 2 | 0 | 1 | 1 | 0 | QFN 8-pin package |
| Z8F081ASB020EC | 8 KB | 1 KB | 0 | 6 | 13 | 2 | 0 | 1 | 1 | 0 | SOIC 8-pin package |
| Z8F081ASH020EC | 8 KB | 1 KB | 0 | 17 | 19 | 2 | 0 | 1 | 1 | 0 | SOIC 20-pin package |
| Z8F081AHH020EC | 8 KB | 1 KB | 0 | 17 | 19 | 2 | 0 | 1 | 1 | 0 | SSOP 20-pin package |
| Z8F081APH020EC | 8 KB | 1 KB | 0 | 17 | 19 | 2 | 0 | 1 | 1 | 0 | PDIP 20-pin package |
| Z8F081ASJ020EC | 8 KB | 1 KB | 0 | 25 | 19 | 2 | 0 | 1 | 1 | 0 | SOIC 28-pin package |
| Z8F081AHJ020EC | 8 KB | 1 KB | 0 | 25 | 19 | 2 | 0 | 1 | 1 | 0 | SSOP 28-pin package |
| Z8F081APJ020EC | 8 KB | 1 KB | 0 | 25 | 19 | 2 | 0 | 1 | 1 | 0 | PDIP 28-pin package |
| Note: Replace C with G for Lead-Free Packaging | | | | | | | | | | | |

| Part Number | Flash | RAM | NVDS | I/O Lines | Interrupts | 16-Bit Timers w/PWM | 10-Bit A/D Channels | UART with IrDA | Comparator | Temperature Sensor | Description |
|---|-------|------|-------|-----------|------------|---------------------|---------------------|----------------|------------|--------------------|---------------------|
| Z8 Encore! XP 8K and 4K Series with 4 KB Flash | | | | | | | | | | | |
| Standard Temperature: 0 °C to +70 °C | | | | | | | | | | | |
| Z8F041APB020SC | 4 KB | 1 KB | 128 B | 6 | 13 | 2 | 0 | 1 | 1 | 0 | PDIP 8-pin package |
| Z8F041AQB020SC | 4 KB | 1 KB | 128 B | 6 | 13 | 2 | 0 | 1 | 1 | 0 | QFN 8-pin package |
| Z8F041ASB020SC | 4 KB | 1 KB | 128 B | 6 | 13 | 2 | 0 | 1 | 1 | 0 | SOIC 8-pin package |
| Z8F041ASH020SC | 4 KB | 1 KB | 128 B | 17 | 19 | 2 | 0 | 1 | 1 | 0 | SOIC 20-pin package |
| Z8F041AHH020SC | 4 KB | 1 KB | 128 B | 17 | 19 | 2 | 0 | 1 | 1 | 0 | SSOP 20-pin package |
| Z8F041APH020SC | 4 KB | 1 KB | 128 B | 17 | 19 | 2 | 0 | 1 | 1 | 0 | PDIP 20-pin package |
| Z8F041ASJ020SC | 4 KB | 1 KB | 128 B | 25 | 19 | 2 | 0 | 1 | 1 | 0 | SOIC 28-pin package |
| Z8F041AHJ020SC | 4 KB | 1 KB | 128 B | 25 | 19 | 2 | 0 | 1 | 1 | 0 | SSOP 28-pin package |
| Z8F041APJ020SC | 4 KB | 1 KB | 128 B | 25 | 19 | 2 | 0 | 1 | 1 | 0 | PDIP 28-pin package |
| Extended Temperature: –40 °C to +105 °C | | | | | | | | | | | |
| Z8F041APB020EC | 4 KB | 1 KB | 128 B | 6 | 13 | 2 | 0 | 1 | 1 | 0 | PDIP 8-pin package |
| Z8F041AQB020EC | 4 KB | 1 KB | 128 B | 6 | 13 | 2 | 0 | 1 | 1 | 0 | QFN 8-pin package |
| Z8F041ASB020EC | 4 KB | 1 KB | 128 B | 6 | 13 | 2 | 0 | 1 | 1 | 0 | SOIC 8-pin package |
| Z8F041ASH020EC | 4 KB | 1 KB | 128 B | 17 | 19 | 2 | 0 | 1 | 1 | 0 | SOIC 20-pin package |
| Z8F041AHH020EC | 4 KB | 1 KB | 128 B | 17 | 19 | 2 | 0 | 1 | 1 | 0 | SSOP 20-pin package |
| Z8F041APH020EC | 4 KB | 1 KB | 128 B | 17 | 19 | 2 | 0 | 1 | 1 | 0 | PDIP 20-pin package |
| Z8F041ASJ020EC | 4 KB | 1 KB | 128 B | 25 | 19 | 2 | 0 | 1 | 1 | 0 | SOIC 28-pin package |
| Z8F041AHJ020EC | 4 KB | 1 KB | 128 B | 25 | 19 | 2 | 0 | 1 | 1 | 0 | SSOP 28-pin package |
| Z8F041APJ020EC | 4 KB | 1 KB | 128 B | 25 | 19 | 2 | 0 | 1 | 1 | 0 | PDIP 28-pin package |
| Note: Replace C with G for Lead-Free Packaging | | | | | | | | | | | |

| Part Number | Flash | RAM | NVDS | I/O Lines | Interrupts | 16-Bit Timers w/PWM | 10-Bit A/D Channels | UART with IrDA | Comparator | Temperature Sensor | Description |
|---|-------|-------|------|-----------|------------|---------------------|---------------------|----------------|------------|--------------------|---------------------|
| Z8 Encore! XP F082A Series with 2 KB Flash, 10-Bit Analog-to-Digital Converter | | | | | | | | | | | |
| Standard Temperature: 0 °C to +70 °C | | | | | | | | | | | |
| Z8F022APB020SC | 2 KB | 512 B | 64 B | 6 | 14 | 2 | 4 | 1 | 1 | 1 | PDIP 8-pin package |
| Z8F022AQB020SC | 2 KB | 512 B | 64 B | 6 | 14 | 2 | 4 | 1 | 1 | 1 | QFN 8-pin package |
| Z8F022ASB020SC | 2 KB | 512 B | 64 B | 6 | 14 | 2 | 4 | 1 | 1 | 1 | SOIC 8-pin package |
| Z8F022ASH020SC | 2 KB | 512 B | 64 B | 17 | 20 | 2 | 7 | 1 | 1 | 1 | SOIC 20-pin package |
| Z8F022AHH020SC | 2 KB | 512 B | 64 B | 17 | 20 | 2 | 7 | 1 | 1 | 1 | SSOP 20-pin package |
| Z8F022APH020SC | 2 KB | 512 B | 64 B | 17 | 20 | 2 | 7 | 1 | 1 | 1 | PDIP 20-pin package |
| Z8F022ASJ020SC | 2 KB | 512 B | 64 B | 23 | 20 | 2 | 8 | 1 | 1 | 1 | SOIC 28-pin package |
| Z8F022AHJ020SC | 2 KB | 512 B | 64 B | 23 | 20 | 2 | 8 | 1 | 1 | 1 | SSOP 28-pin package |
| Z8F022APJ020SC | 2 KB | 512 B | 64 B | 23 | 20 | 2 | 8 | 1 | 1 | 1 | PDIP 28-pin package |
| Extended Temperature: –40 °C to +105 °C | | | | | | | | | | | |
| Z8F022ASB020EC | 2 KB | 512 B | 64 B | 6 | 14 | 2 | 4 | 1 | 1 | 1 | SOIC 8-pin package |
| Z8F022AQB020EC | 2 KB | 512 B | 64 B | 6 | 14 | 2 | 4 | 1 | 1 | 1 | QFN 8-pin package |
| Z8F022APB020EC | 2 KB | 512 B | 64 B | 6 | 14 | 2 | 4 | 1 | 1 | 1 | PDIP 8-pin package |
| Z8F022ASH020EC | 2 KB | 512 B | 64 B | 17 | 20 | 2 | 7 | 1 | 1 | 1 | SOIC 20-pin package |
| Z8F022AHH020EC | 2 KB | 512 B | 64 B | 17 | 20 | 2 | 7 | 1 | 1 | 1 | SSOP 20-pin package |
| Z8F022APH020EC | 2 KB | 512 B | 64 B | 17 | 20 | 2 | 7 | 1 | 1 | 1 | PDIP 20-pin package |
| Z8F022ASJ020EC | 2 KB | 512 B | 64 B | 23 | 20 | 2 | 8 | 1 | 1 | 1 | SOIC 28-pin package |
| Z8F022AHJ020EC | 2 KB | 512 B | 64 B | 23 | 20 | 2 | 8 | 1 | 1 | 1 | SSOP 28-pin package |
| Z8F022APJ020EC | 2 KB | 512 B | 64 B | 23 | 20 | 2 | 8 | 1 | 1 | 1 | PDIP 28-pin package |
| Note: Replace C with G for Lead-Free Packaging | | | | | | | | | | | |

| Part Number | Flash | RAM | NVDS | I/O Lines | Interrupts | 16-Bit Timers w/PWM | 10-Bit A/D Channels | UART with IrDA | Comparator | Temperature Sensor | Description |
|---|-------|-------|------|-----------|------------|---------------------|---------------------|----------------|------------|--------------------|---------------------|
| Z8 Encore! XP F082A Series with 2 KB Flash | | | | | | | | | | | |
| Standard Temperature: 0 °C to +70 °C | | | | | | | | | | | |
| Z8F021APB020SC | 2 KB | 512 B | 64 B | 6 | 13 | 2 | 0 | 1 | 1 | 0 | PDIP 8-pin package |
| Z8F021AQB020SC | 2 KB | 512 B | 64 B | 6 | 13 | 2 | 0 | 1 | 1 | 0 | QFN 8-pin package |
| Z8F021ASB020SC | 2 KB | 512 B | 64 B | 6 | 13 | 2 | 0 | 1 | 1 | 0 | SOIC 8-pin package |
| Z8F021ASH020SC | 2 KB | 512 B | 64 B | 17 | 19 | 2 | 0 | 1 | 1 | 0 | SOIC 20-pin package |
| Z8F021AHH020SC | 2 KB | 512 B | 64 B | 17 | 19 | 2 | 0 | 1 | 1 | 0 | SSOP 20-pin package |
| Z8F021APH020SC | 2 KB | 512 B | 64 B | 17 | 19 | 2 | 0 | 1 | 1 | 0 | PDIP 20-pin package |
| Z8F021ASJ020SC | 2 KB | 512 B | 64 B | 25 | 19 | 2 | 0 | 1 | 1 | 0 | SOIC 28-pin package |
| Z8F021AHJ020SC | 2 KB | 512 B | 64 B | 25 | 19 | 2 | 0 | 1 | 1 | 0 | SSOP 28-pin package |
| Z8F021APJ020SC | 2 KB | 512 B | 64 B | 25 | 19 | 2 | 0 | 1 | 1 | 0 | PDIP 28-pin package |
| Extended Temperature: –40 °C to +105 °C | | | | | | | | | | | |
| Z8F021APB020EC | 2 KB | 512 B | 64 B | 6 | 13 | 2 | 0 | 1 | 1 | 0 | PDIP 8-pin package |
| Z8F021AQB020EC | 2 KB | 512 B | 64 B | 6 | 13 | 2 | 0 | 1 | 1 | 0 | QFN 8-pin package |
| Z8F021ASB020EC | 2 KB | 512 B | 64 B | 6 | 13 | 2 | 0 | 1 | 1 | 0 | SOIC 8-pin package |
| Z8F021ASH020EC | 2 KB | 512 B | 64 B | 17 | 19 | 2 | 0 | 1 | 1 | 0 | SOIC 20-pin package |
| Z8F021AHH020EC | 2 KB | 512 B | 64 B | 17 | 19 | 2 | 0 | 1 | 1 | 0 | SSOP 20-pin package |
| Z8F021APH020EC | 2 KB | 512 B | 64 B | 17 | 19 | 2 | 0 | 1 | 1 | 0 | PDIP 20-pin package |
| Z8F021ASJ020EC | 2 KB | 512 B | 64 B | 25 | 19 | 2 | 0 | 1 | 1 | 0 | SOIC 28-pin package |
| Z8F021AHJ020EC | 2 KB | 512 B | 64 B | 25 | 19 | 2 | 0 | 1 | 1 | 0 | SSOP 28-pin package |
| Z8F021APJ020EC | 2 KB | 512 B | 64 B | 25 | 19 | 2 | 0 | 1 | 1 | 0 | PDIP 28-pin package |
| Note: Replace C with G for Lead-Free Packaging | | | | | | | | | | | |

| Part Number | Flash | RAM | NVDS | I/O Lines | Interrupts | 16-Bit Timers w/PWM | 10-Bit A/D Channels | UART with IrDA | Comparator | Temperature Sensor | Description |
|---|-------|-------|------|-----------|------------|---------------------|---------------------|----------------|------------|--------------------|---------------------|
| Z8 Encore! XP F082A Series with 1 KB Flash, 10-Bit Analog-to-Digital Converter | | | | | | | | | | | |
| Standard Temperature: 0 °C to +70 °C | | | | | | | | | | | |
| Z8F012APB020SC | 1 KB | 256 B | 16 B | 6 | 14 | 2 | 4 | 1 | 1 | 1 | PDIP 8-pin package |
| Z8F012AQB020SC | 1 KB | 256 B | 16 B | 6 | 14 | 2 | 4 | 1 | 1 | 1 | QFN 8-pin package |
| Z8F012ASB020SC | 1 KB | 256 B | 16 B | 6 | 14 | 2 | 4 | 1 | 1 | 1 | SOIC 8-pin package |
| Z8F012ASH020SC | 1 KB | 256 B | 16 B | 17 | 20 | 2 | 7 | 1 | 1 | 1 | SOIC 20-pin package |
| Z8F012AHH020SC | 1 KB | 256 B | 16 B | 17 | 20 | 2 | 7 | 1 | 1 | 1 | SSOP 20-pin package |
| Z8F012APH020SC | 1 KB | 256 B | 16 B | 17 | 20 | 2 | 7 | 1 | 1 | 1 | PDIP 20-pin package |
| Z8F012ASJ020SC | 1 KB | 256 B | 16 B | 23 | 20 | 2 | 8 | 1 | 1 | 1 | SOIC 28-pin package |
| Z8F012AHJ020SC | 1 KB | 256 B | 16 B | 23 | 20 | 2 | 8 | 1 | 1 | 1 | SSOP 28-pin package |
| Z8F012APJ020SC | 1 KB | 256 B | 16 B | 23 | 20 | 2 | 8 | 1 | 1 | 1 | PDIP 28-pin package |
| Extended Temperature: –40 °C to +105 °C | | | | | | | | | | | |
| Z8F012APB020EC | 1 KB | 256 B | 16 B | 6 | 14 | 2 | 4 | 1 | 1 | 1 | PDIP 8-pin package |
| Z8F012AQB020EC | 1 KB | 256 B | 16 B | 6 | 14 | 2 | 4 | 1 | 1 | 1 | QFN 8-pin package |
| Z8F012ASB020EC | 1 KB | 256 B | 16 B | 6 | 14 | 2 | 4 | 1 | 1 | 1 | SOIC 8-pin package |
| Z8F012ASH020EC | 1 KB | 256 B | 16 B | 17 | 20 | 2 | 7 | 1 | 1 | 1 | SOIC 20-pin package |
| Z8F012AHH020EC | 1 KB | 256 B | 16 B | 17 | 20 | 2 | 7 | 1 | 1 | 1 | SSOP 20-pin package |
| Z8F012APH020EC | 1 KB | 256 B | 16 B | 17 | 20 | 2 | 7 | 1 | 1 | 1 | PDIP 20-pin package |
| Z8F012ASJ020EC | 1 KB | 256 B | 16 B | 23 | 20 | 2 | 8 | 1 | 1 | 1 | SOIC 28-pin package |
| Z8F012AHJ020EC | 1 KB | 256 B | 16 B | 23 | 20 | 2 | 8 | 1 | 1 | 1 | SSOP 28-pin package |
| Z8F012APJ020EC | 1 KB | 256 B | 16 B | 23 | 20 | 2 | 8 | 1 | 1 | 1 | PDIP 28-pin package |
| Note: Replace C with G for Lead-Free Packaging | | | | | | | | | | | |

| Part Number | Flash | RAM | NVDS | I/O Lines | Interrupts | 16-Bit Timers w/PWM | 10-Bit A/D Channels | UART with IrDA | Comparator | Temperature Sensor | Description |
|---|-------|-------|------|-----------|------------|---------------------|---------------------|----------------|------------|--------------------|---------------------|
| Z8 Encore! XP F082A Series with 1 KB Flash | | | | | | | | | | | |
| Standard Temperature: 0 °C to +70 °C | | | | | | | | | | | |
| Z8F011APB020SC | 1 KB | 256 B | 16 B | 6 | 13 | 2 | 0 | 1 | 1 | 0 | PDIP 8-pin package |
| Z8F011AQB020SC | 1 KB | 256 B | 16 B | 6 | 13 | 2 | 0 | 1 | 1 | 0 | QFN 8-pin package |
| Z8F011ASB020SC | 1 KB | 256 B | 16 B | 6 | 13 | 2 | 0 | 1 | 1 | 0 | SOIC 8-pin package |
| Z8F011ASH020SC | 1 KB | 256 B | 16 B | 17 | 19 | 2 | 0 | 1 | 1 | 0 | SOIC 20-pin package |
| Z8F011AHH020SC | 1 KB | 256 B | 16 B | 17 | 19 | 2 | 0 | 1 | 1 | 0 | SSOP 20-pin package |
| Z8F011APH020SC | 1 KB | 256 B | 16 B | 17 | 19 | 2 | 0 | 1 | 1 | 0 | PDIP 20-pin package |
| Z8F011ASJ020SC | 1 KB | 256 B | 16 B | 25 | 19 | 2 | 0 | 1 | 1 | 0 | SOIC 28-pin package |
| Z8F011AHJ020SC | 1 KB | 256 B | 16 B | 25 | 19 | 2 | 0 | 1 | 1 | 0 | SSOP 28-pin package |
| Z8F011APJ020SC | 1 KB | 256 B | 16 B | 25 | 19 | 2 | 0 | 1 | 1 | 0 | PDIP 28-pin package |
| Extended Temperature: –40 °C to +105 °C | | | | | | | | | | | |
| Z8F011APB020EC | 1 KB | 256 B | 16 B | 6 | 13 | 2 | 0 | 1 | 1 | 0 | PDIP 8-pin package |
| Z8F011AQB020EC | 1 KB | 256 B | 16 B | 6 | 13 | 2 | 0 | 1 | 1 | 0 | QFN 8-pin package |
| Z8F011ASB020EC | 1 KB | 256 B | 16 B | 6 | 13 | 2 | 0 | 1 | 1 | 0 | SOIC 8-pin package |
| Z8F011ASH020EC | 1 KB | 256 B | 16 B | 17 | 19 | 2 | 0 | 1 | 1 | 0 | SOIC 20-pin package |
| Z8F011AHH020EC | 1 KB | 256 B | 16 B | 17 | 19 | 2 | 0 | 1 | 1 | 0 | SSOP 20-pin package |
| Z8F011APH020EC | 1 KB | 256 B | 16 B | 17 | 19 | 2 | 0 | 1 | 1 | 0 | PDIP 20-pin package |
| Z8F011ASJ020EC | 1 KB | 256 B | 16 B | 25 | 19 | 2 | 0 | 1 | 1 | 0 | SOIC 28-pin package |
| Z8F011AHJ020EC | 1 KB | 256 B | 16 B | 25 | 19 | 2 | 0 | 1 | 1 | 0 | SSOP 28-pin package |
| Z8F011APJ020EC | 1 KB | 256 B | 16 B | 25 | 19 | 2 | 0 | 1 | 1 | 0 | PDIP 28-pin package |
| Note: Replace C with G for Lead-Free Packaging | | | | | | | | | | | |

| Part Number | Flash | RAM | NVDS | I/O Lines | Interrupts | 16-Bit Timers w/PWM | 10-Bit A/D Channels | UART with IrDA | Comparator | Temperature Sensor | Description |
|--|-------|-----|------|-----------|------------|---------------------|---------------------|----------------|------------|--------------------|--|
| Z8 Encore! XP F082A Series Development Kit | | | | | | | | | | | |
| Z8F08A28100KITG | | | | | | | | | | | Z8 Encore! XP F082A 28-Pin Development Kit |
| Z8F04A08100KITG | | | | | | | | | | | Z8 Encore! XP F042A Series 8-Pin Development Kit |
| ZUSBSC00100ZACG | | | | | | | | | | | USB Smart Cable Accessory Kit |
| ZUSBOPTSC01ZACG | | | | | | | | | | | USB Opto-isolated Smart Cable Accessory Kit |
| ZENETSC0100ZACG | | | | | | | | | | | Ethernet Smart Cable Accessory Kit |

Part Number Suffix Designations



 **Warning:** DO NOT USE IN LIFE SUPPORT

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As used herein

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