# Z8F64200100KITG

# Z8 Encore! XP® F64XX Series Development Kit

## User Manual

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# Revision History

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| May 2008 | 10 | Added Z8F6423FT020 to Introduction section.<br><br>Removed Application Notes from Documentation section. | 1<br><br>3 |
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# Introduction

Zilog's Z8 Encore! XP® F64XX Series MCUs are a part of the line of Zilog® microcontroller products.

The Z8 Encore! XP F64XX Series Development Kit (Z8F64200100KITG) allows you to get familiar with the hardware and software tools available with this product. This kit consists of the 64 KB version of the Z8 Encore! XP Development Board that supports and presents the features of the Z8 Encore! XP F64XX Series. The software development tool kit allows you to write application software and contains all supporting documents.

Z8F6423FT020 is the silicon used in the board. For more details, refer to *Z8 Encore! XP® F64XX Series Product Specification (PS0199)* available for download at www.zilog.com.

This user manual acquaints you with the Z8 Encore! XP F64XX Series Development Kit, and provides instructions on setting up and using the tools to start building designs and applications.

## Safeguards

The following precautions must be observed when working with the devices described in this document.

**Caution:** *Always use a grounding strap to prevent damage resulting from electrostatic discharge (ESD).*

## Kit Contents

The Z8 Encore! XP F64XX Series Development Kit contains the following hardware and software:

## Hardware

The hardware in Z8 Encore! XP F64XX Series Development Kit includes:

- Z8 Encore! XP Z8F642 Development Board
- USB Smart Cable for PC to Z8 Encore! XP® Z8F642 development board (Previous versions of the development kit used a serial smart cable. Refer your original documentation for information on using the serial smart cable).
- 5 V DC power supply

**Figure 1. Z8 Encore! XP MCU Development Kit Contents (USB Smart Cable not shown)**

## Software (on CD-ROM)

The software in Z8 Encore! XP F64XX Series Development Kit includes:

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

## Documentation

- Z8 Encore! XP® F64XX Series Development Kit Quick Start Guide (QS0028)
- Z8 Encore! XP Z8F642 technical documentation (on CD-ROM):
  - Z8 Encore! XP® F64XX Series Development Kit User Manual (UM0151)
  - Zilog Developer Studio II - Z8 Encore!® User Manual (UM0130)
  - eZ8™ CPU User Manual (UM0128)
  - Z8 Encore! XP® F64XX Series Product Specification (PS0199)
  - Z8 Encore! XP® F64XX Series Product Brief (PB0124)
  - Programmer's Reference Sheet

The sample code is installed with ZDS II and resides in the `<installation directory>\samples` folder.

The documentation can be installed with the DemoShield interface or can be viewed on the CD-ROM using the DemoShield menus and a PDF reader. A copy of the Acrobat installer is provided on the CD-ROM and can be installed from the DemoShield install screen. After installing the documentation Windows Explorer can be used to select any document to be viewed with PDF file viewer.

# System/Software Requirements

IBM PC (or compatible computer) with the following minimum configurations:

## Supported Host System Configuration

- Win98 Second Edition/WinNT 4.0 Service Pack 6 (USB Smart Cable not supported)/Win2000 Service Pack 4/Windows XP Professional
- PentiumII/233 MHz processor or higher up to Pentium IV, 2.8 GHz
- 96 MB RAM or more
- 25 MB hard disk space or more (no documentation)
- Super VGA video adapter
- CD-ROM
- One or more RS-232 communication ports
- USB high-speed port (when using USB Smart Cable)

# Installation

Refer to the directions provided in the Quick Start guide for software installation and setup of the Z8 Encore! XP® F64XX Series development kit.

# F64XX Series Development Board

## Introduction

The Z8 Encore! XP® F64XX Series development board is a development and prototyping board for the Z8 Encore! XP Z8F642 microcontroller. The board allows you to evaluate features of Z8 Encore! XP F64XX Series and to develop an application before building the hardware.

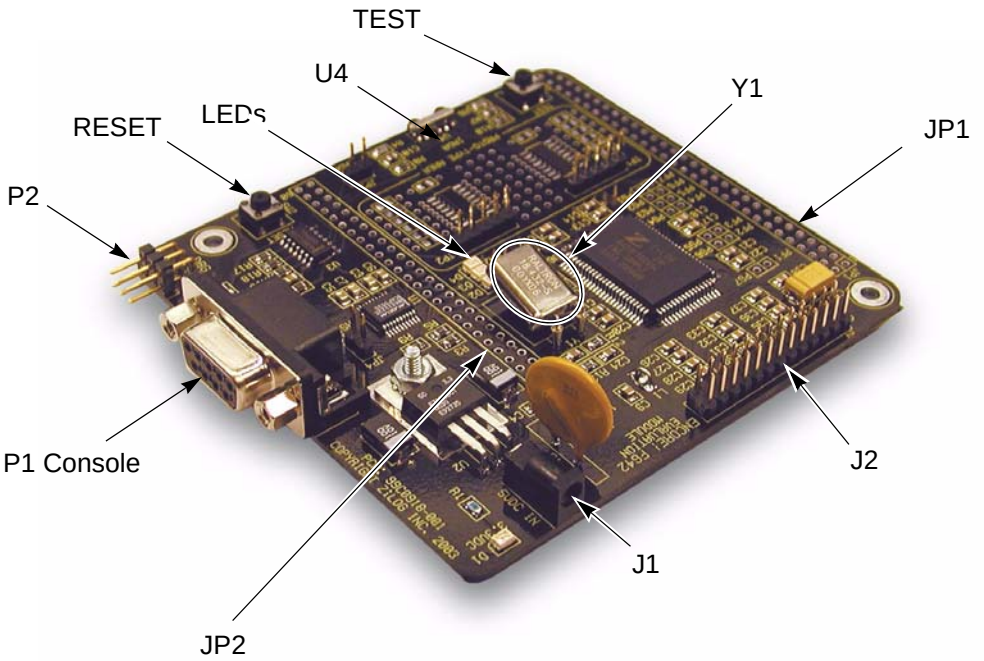


**Figure 2. Z8 Encore! XP F64XX Series Development Board**

## Features

The features of Z8 Encore! XP F64XX Series development board includes:

- Z8 Encore! XP MCU
- 3 LEDs
- RS-232 interface (P1)
- IrDA transceiver (U4)
- Two pushbuttons, RESET and TEST
- 5 V DC power connector (J1)
- On-Chip Debugger interface (P2)
- Crystal Oscillator (Y1)
- Header for Analog-to-Digital Converter (ADC) input (J2)
- Prototyping area
- External interface connectors JP1 and JP2 (not populated)

## MCU

The Z8 Encore! XP Z8F642 MCU is member of a family of Zilog® microcontroller products based on Zilog's 8-bit eZ8™ core CPU. The Flash in-circuit programming capability allows for faster development time and program changes in the field. The eZ8 core CPU is upward compatible with existing Z8® instructions. The rich peripheral set of the Z8 Encore! XP Z8F642 makes it suitable for various applications including motor control, security systems, home appliances, personal electronic devices, and sensors.

The development board contains circuitry to support and present all the features of the Z8 Encore! XP® Z8F642. The main features of the Z8 Encore! XP Z8F642 MCU are:

- eZ8™ core CPU
- Up to 64 KB of Flash memory with in-circuit programming capability
- Up to 4 KB of register RAM
- Either eight or twelve channels, 10-bit ADC
- Two Full-duplex UART
- $I^2C$ interface (Master Mode only)
- Serial Peripheral Interface (SPI)
- Infrared Data Association (IrDA)-compliant infrared encoder/decoder
- Three or four 16-bit timers with capture, compare, and PWM capability
- Watchdog Timer (WDT) with internal RC oscillator
- Thirty one, forty six or sixty I/O pins
- Programmable priority interrupts
- On-Chip Debugger (OCD)
- Voltage Brownout Protection (VBO)
- Power-on Reset (POR)
- 2.7 V to 3.6 V operating voltage with 5 V-tolerant inputs
- Operating temperature: 20 °C ± 10 °C

For more information on the Z8 Encore! XP family of devices, refer to *Z8 Encore! XP® F64XX Series Product Specification (PS0199)* available for download at www.zilog.com.

## IrDA Transceiver with Endec

The Z8 Encore! XP® Z8F642 contains a fully-functional, high-performance UART with Infrared Encoder/Decoder (Endec). The Infrared Endec is integrated with an on-chip UART to allow easy communication between the Z8 Encore! XP Z8F642 and IrDA transceivers. Infrared communication provides secure, reliable, low-cost, point-to-point communication between PCs, PDAs, cell phones, printers and other infrared enabled devices.

## Power and Communication Interfaces

Table 1 provides jumper information concerning the shunt status, functions and devices affected by selected jumpers.

**Table 1. Jumpers JP3 and JP4**

| Jumper | Status | Device Affected | Status | Default |
|---|---|---|---|---|
| JP3 | OUT* | IrDA interface | Enable | |
| JP3 | IN | IrDA interface | Disable | X |
| JP4** | OUT* | RS-232 | Enable | X |
| JP4 | IN | RS-232 | Disable | |

* These jumpers must not be OUT at the same time.

** If the module is plugged onto an eZ80® Development platform or eZ80 demonstration board the local RS-232 can be disabled by connecting header JP2 pin 50 to the corresponding GND on the mating connector.

## External Interface Connectors JP1 and JP2

The external interface connectors are not populated when the board is shipped. You can insert 0.1" space headers of choice.

**Note:** *Only Power and GND nets on connector JP1 are used on this module.*

# Schematics

This section provides schematics for the Z8 Encore! XP® F64XX Series Development Board.

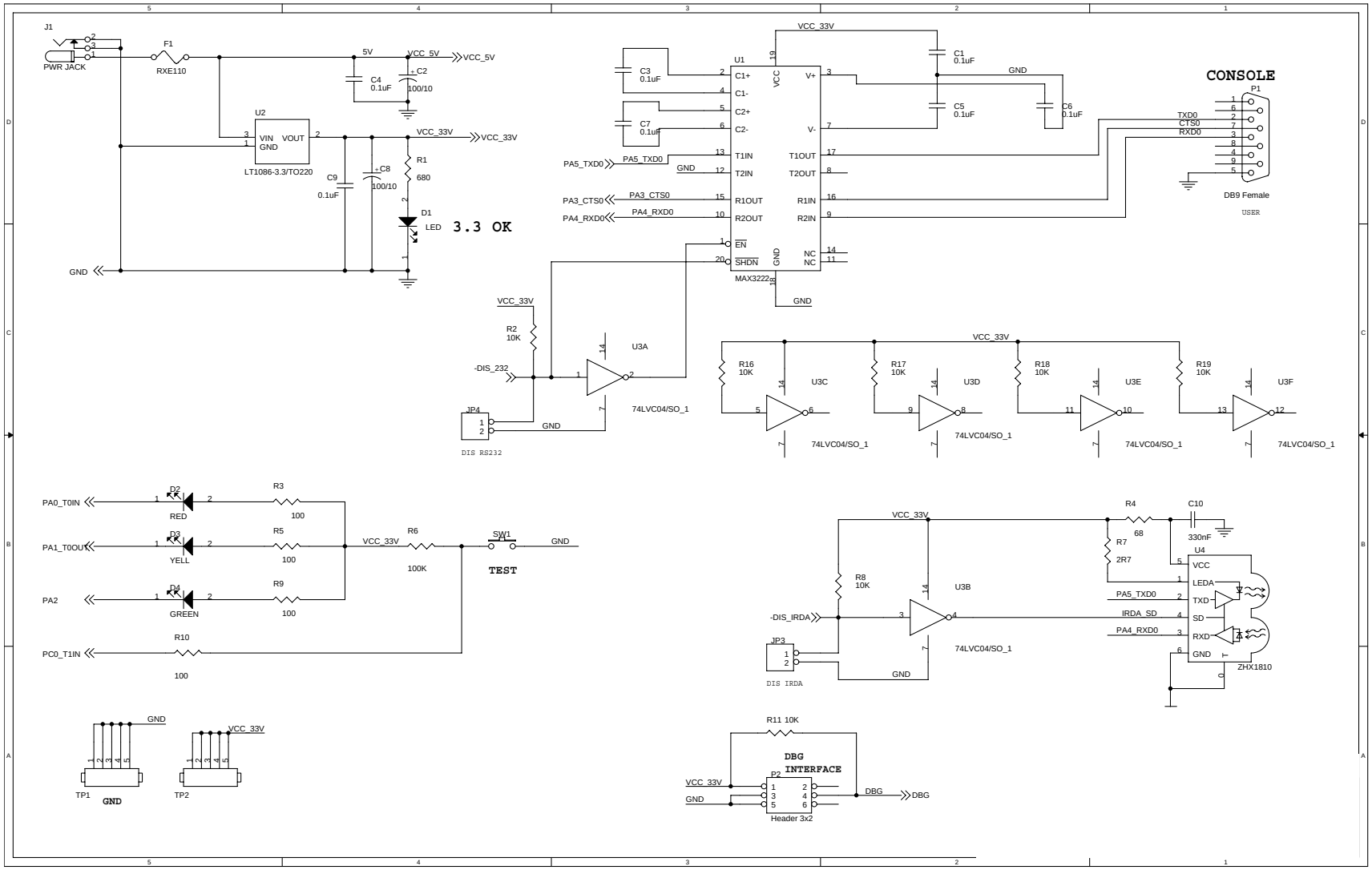


**Figure 3. Z8 Encore! XP F64XX Series Development Board**

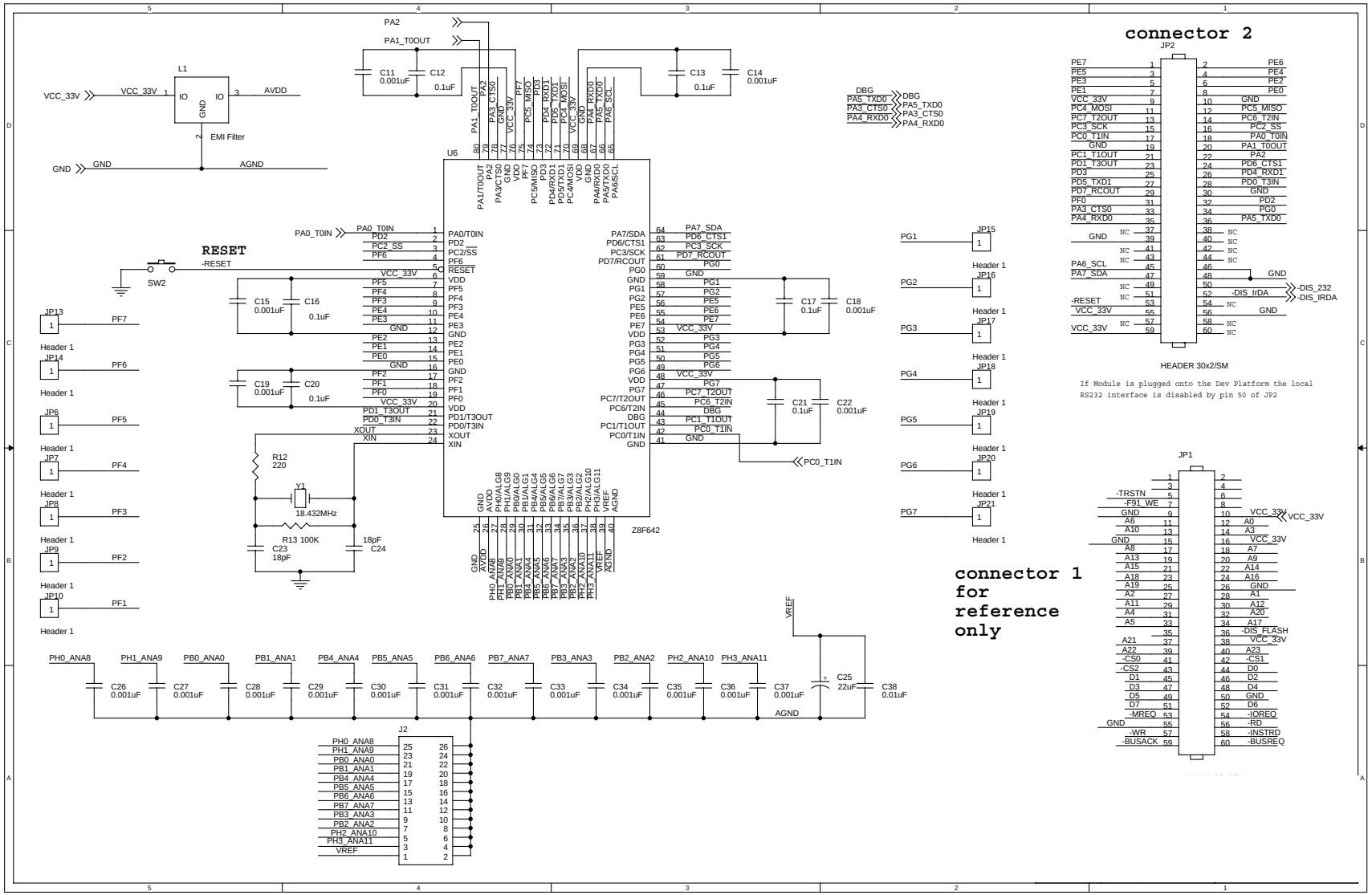


**Figure 4. Z8 Encore! XP F64XX Series Development Board (Continued)**

# Customer Support

For answers to technical questions about the product, documentation, or any other issues with Zilog's offerings, please visit Zilog's Knowledge Base at:

http://www.zilog.com/kb.

For any comments, detail technical questions, or reporting problems, please visit Zilog's Technical Support at:

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

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