



**Z8F08200100KIT**

**Z8 Encore!® 8K/4K MCU  
Evaluation Kit**

**User Manual**

UM015004-1105



This publication is subject to replacement by a later edition. To determine whether a later edition exists, or to request copies of publications, contact:

**ZiLOG Worldwide Headquarters**

532 Race Street  
San Jose, CA 95126-3432  
Telephone: 408.558.8500  
Fax: 408.558.8300  
[www.ZiLOG.com](http://www.ZiLOG.com)

**Document Disclaimer**

ZiLOG is a registered trademark of ZiLOG Inc. in the United States and in other countries. All other products and/or service names mentioned herein may be trademarks of the companies with which they are associated.

©2005 by ZiLOG, Inc. All rights reserved. Information in this publication concerning the devices, applications, or technology described is intended to suggest possible uses and may be superseded. ZiLOG, INC. DOES NOT ASSUME LIABILITY FOR OR PROVIDE A REPRESENTATION OF ACCURACY OF THE INFORMATION, DEVICES, OR TECHNOLOGY DESCRIBED IN THIS DOCUMENT. ZiLOG ALSO DOES NOT ASSUME LIABILITY FOR INTELLECTUAL PROPERTY INFRINGEMENT RELATED IN ANY MANNER TO USE OF INFORMATION, DEVICES, OR TECHNOLOGY DESCRIBED HEREIN OR OTHERWISE. Except with the express written approval of ZiLOG, use of information, devices, or technology as critical components of life support systems is not authorized. No licenses are conveyed, implicitly or otherwise, by this document under any intellectual property rights.



# 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).

# Revision History

Date	Revision Level	Description	Page #
November 2005	04	Removed the word Preliminary from all page footers and updated trademarks.	All



# *Table of Contents*

<b>Safeguards.....</b>	iii
<b>Revision History.....</b>	iii
<b>Table of Contents.....</b>	iv
<b>List of Figures.....</b>	v
<b>List of Tables.....</b>	v
<b>Introduction .....</b>	1
Kit Contents .....	1
Hardware .....	1
Software (on CD-ROM) .....	2
Documentation .....	2
System/Software Requirements .....	3
Supported Host System Configuration .....	3
<b>Installation .....</b>	5
<b>Z8 Encore! 8K/4K Evaluation Board.....</b>	6
Introduction .....	6
Features .....	7
MCU .....	7
UART with IrDA Endec .....	8
Crystal Oscillator .....	9
Power and Communication Interfaces .....	9
External Interface Headers JP1 and JP2 .....	10
<b>Schematics.....</b>	11



## *List of Figures*

Figure 1.	Z8 Encore! MCU Evaluation Kit Contents .....	2
Figure 2.	Z8 Encore!® 8K/4K Evaluation Board .....	6

## *List of Tables*

Table 1.	Jumpers JP3 and JP4 .....	9
----------	---------------------------	---



# *Introduction*

The Z8 Encore!® 8K/4K MCU is the part of the line of ZiLOG microcontroller products.

The Z8 Encore! MCU Evaluation Kit (Z8F08200100KIT) enables users to become familiar with the hardware and software tools available with this product. This kit consists of the 8KB version of the Z8 Encore! evaluation board that supports and presents the features of the Z8 Encore! 8K/4K. This kit allows users to begin writing application software and contains all supporting documents.

This manual acquaints users with the Z8 Encore! 8K/4K MCU Evaluation Kit, and gives instructions on setting up and using the tools to start building designs and applications.

## **Kit Contents**

The Z8 Encore!® 8K/4K MCU Evaluation Kit contains the following:

### **Hardware**

- Z8 Encore!® 8K/4K Evaluation board
- Smart Cable for PC to Z8 Encore! 8K/4K evaluation board (DB9 to six-pin male)
- 5VDC power supply



**Figure 1. Z8 Encore! MCU Evaluation Kit Contents**

## **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/4K technical documentation (on CD-ROM)
  - Evaluation Kit User Manual
  - ZDS II - IDE User Manual
  - eZ8 CPU User Manual
  - Product Specification
  - Product brief
  - Application notes
  - Programmer's Reference Sheet

The sample code is installed with ZDS II and resides in the <installation directory>\samples in the user's disk drive.

The documentation can be installed by the user 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 on the user's system Windows Explorer can be used to select any document to be viewed with your favorite 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, Win2000 Service Pack 3, WinXP Service Pack 1
- PentiumII/233MHz processor or higher up to Pentium IV, 2.8 GHz
- 96MB RAM or more
- 25MB hard disk space or more
- Super VGA video adapter



- CD-ROM
- One or more RS-232 communication ports



# *Installation*

Follow the directions in the Quick Start Guide for software installation and setup of the Z8 Encore! evaluation kit.

# Z8 Encore! 8K/4K Evaluation Board

## Introduction

The Z8 Encore! 8K/4K evaluation board is an evaluation and prototyping board for the Z8 Encore! Z8 Encore! 8K/4K MCU. The board provides customers with a tool to evaluate features of Z8 Encore! 8K/4K MCU, and to start developing an application before building the hardware.

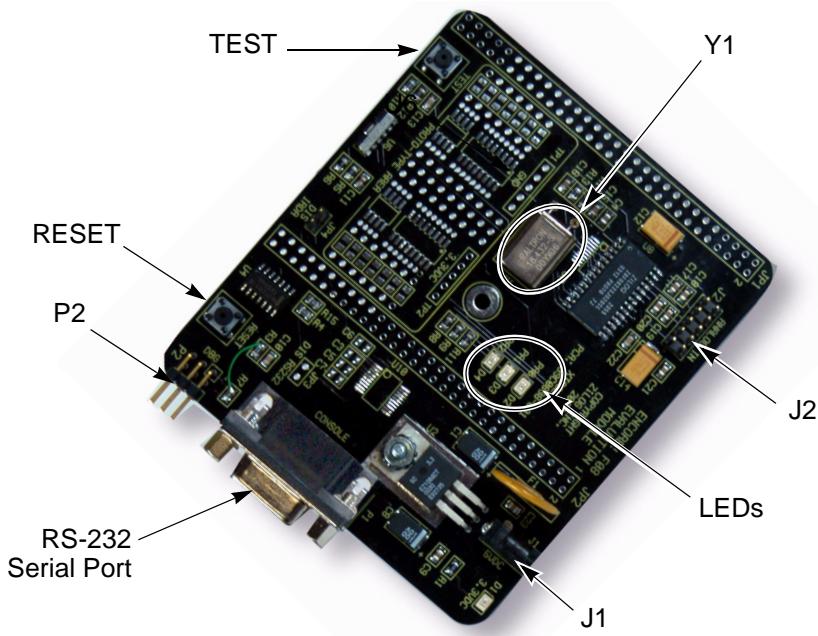


Figure 14. Z8 Encore!® 8K/4K Evaluation Board



## Features

- Z8 Encore!® MCU (28-pin SOIC)
- 3 LEDs
- RS-232 interface
- IrDA transceiver
- Two pushbuttons, RESET and TEST
- 5VDC power connector
- On-Chip Debugger interface
- Crystal Oscillator at 18.432MHz
- Header for ADC input
- Prototyping area
- External interface connectors JP1 and JP2
- 2.7–3.6V operating voltage with 5V-tolerant inputs

## MCU

The Z8 Encore!® 8K/4K MCU is member of a family of ZiLOG micro-controller products based upon the 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! 8K/4K makes it suitable for a variety of applications including motor control, security systems, home appliances, personal electronic devices, and sensors.

The evaluation board contains circuitry to support and present all the features of the Z8 Encore! 8K/4K. The main features of the Z8 Encore! 8K/4K are:



- eZ8 core CPU
- 8KB Flash memory with in-circuit programming capability
- 1KB register RAM
- 5-channel, 10-bit analog-to-digital converter (ADC)
- Full-duplex UART
- I<sup>2</sup>C interface (Master Mode only)
- Serial Peripheral Interface (SPI)
- Infrared Data Association (IrDA)-compliant infrared encoder/decoder
- Two 16-bit timers with capture, compare, and PWM capability
- Watch-Dog Timer (WDT) with internal RC oscillator
- Eleven or nineteen I/O pins
- Programmable priority interrupts
- On-Chip Debugger
- Voltage Brown-out Protection (VBO)
- Power-On Reset (POR)
- 2.7–3.6V operating voltage with 5V-tolerant inputs
- Operating temperatures: 20° ±10°C

For further information on the Z8 Encore!® family of devices, consult the product specification, P/N PS0197, available for download from [www.zilog.com](http://www.zilog.com).

## UART with IrDA Endec

The Z8 Encore! 8K/4K contains a fully-functional, high-performance UART with Infrared Encoder/Decoder (ENDEC), component U6. The Infrared Endec is integrated with an on-chip UART allowing easy com-



munication between the Z8 Encore! 8K/4K and IrDA transceivers. Infra-red communication provides secure, reliable, low-cost, point-to-point communication between PCs, PDAs, cell phones, printers and other infra-red enabled devices.

## Crystal Oscillator

The evaluation board ships with an 18.432MHz Crystal Oscillator (Y1). If you want to change the change the Crystal Oscillator you are required to change the Clock Frequency in for ZDSII. The frequency settings can be found at Project > Settings > Debugger > ZDB: Configure ZDB Driver: Clock Frequency. See the Z8Encore! Product Specification for supported frequencies.

## Power and Communication Interfaces

Table 1 provides jumper information concerning the shunt status, functions, devices and defaults affected of jumpers JP3 and JP4.

**Table 1. Jumpers JP3 and JP4**

Jumper	Status	Device Affected	Status	Default
JP3**	OUT*	RS-232 interface	Enabled	X
JP3	IN	RS-232 interface	Disabled	
JP4	OUT*	IrDA interface	Enabled	
JP4	IN	IrDA interface	Disabled	X

Note: \* These jumpers must not be OUT at the same time  
Note: \*\* If the module is plugged onto an eZ80 Evaluation 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



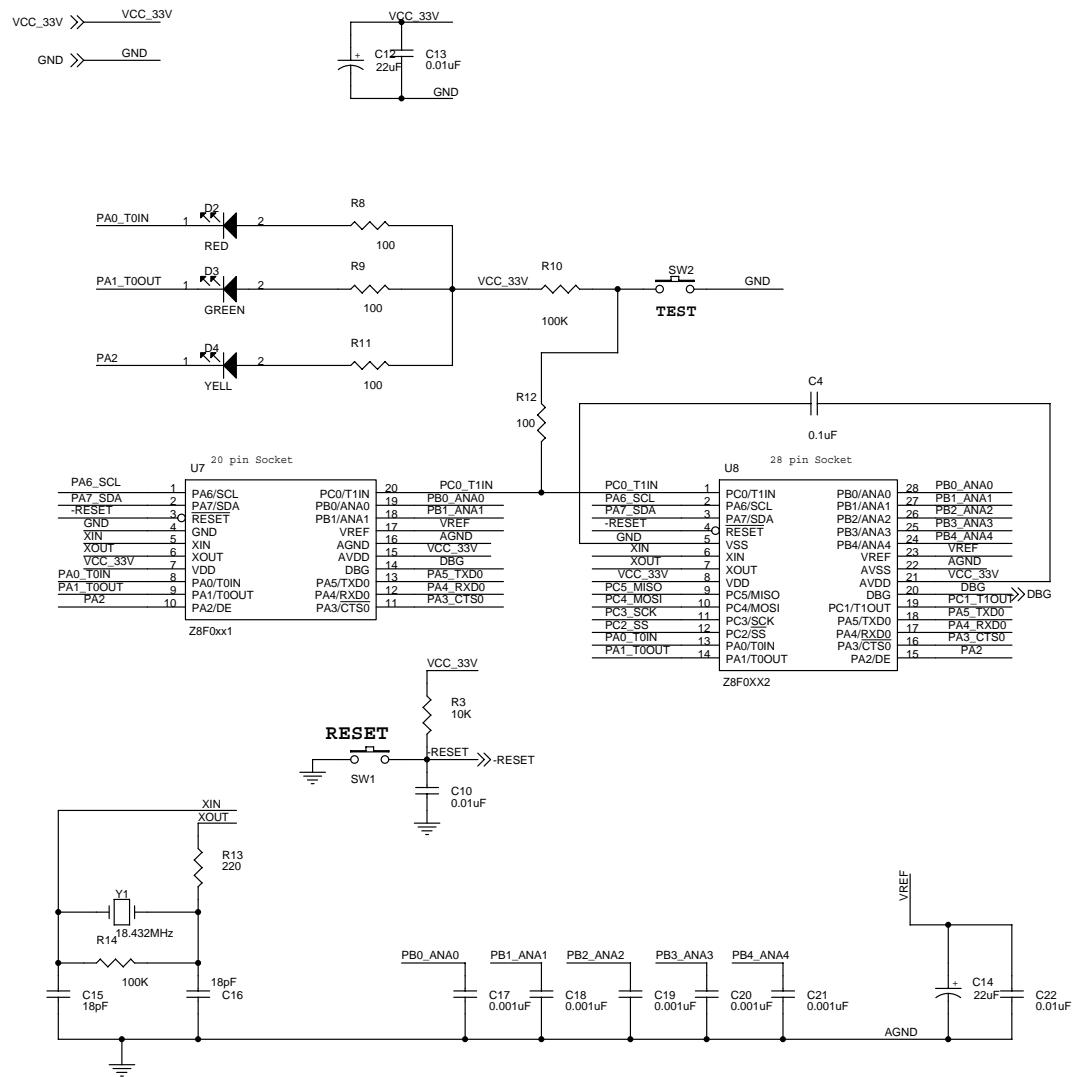
## **External Interface Headers JP1 and JP2**

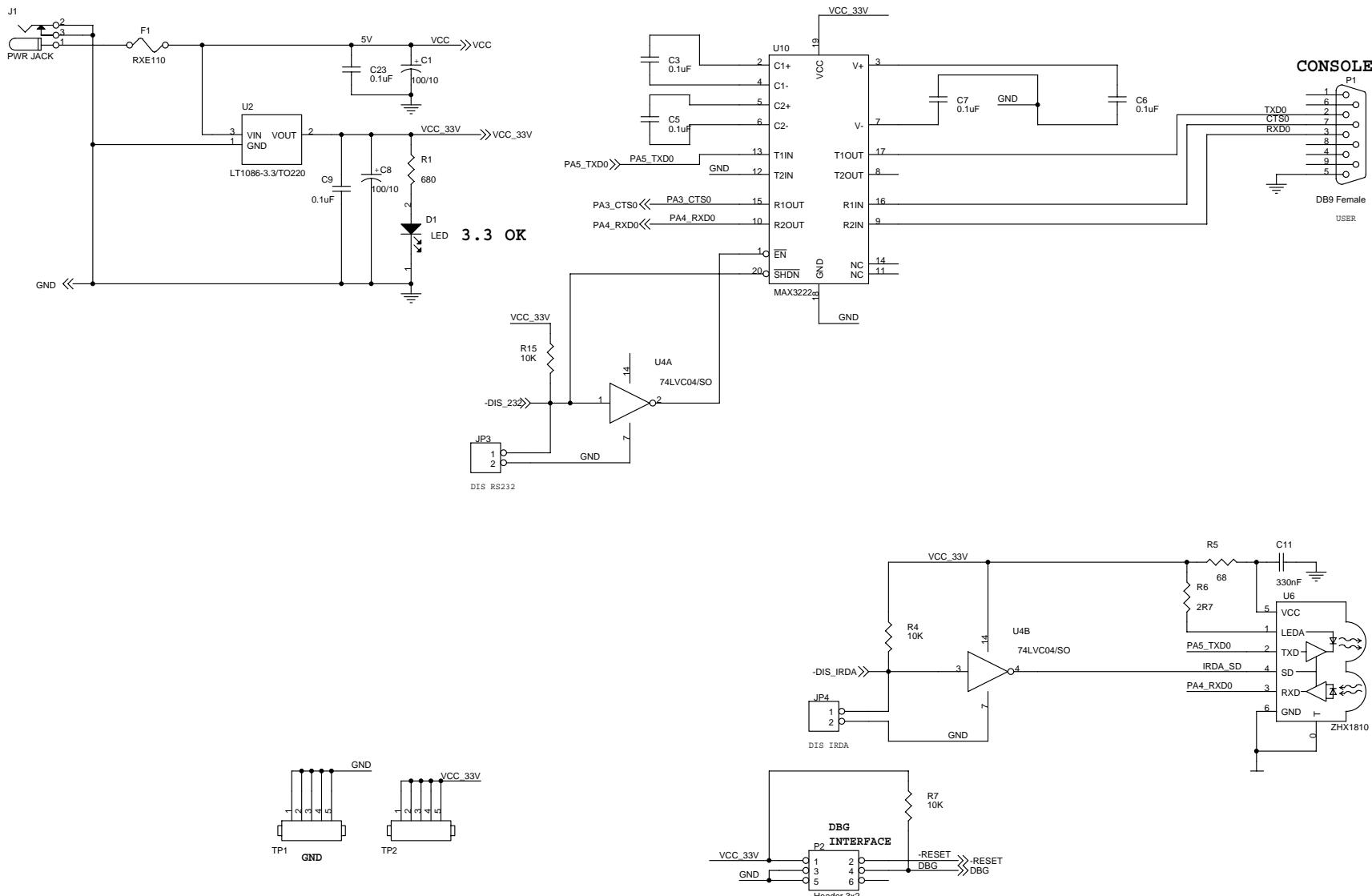
The external interface headers, JP1 and JP2 contain no connectors when the board is shipped. The user can insert 0.1" space connectors of choice.



# *Schematics*

This section includes schematics for the the Z8 Encore!® 8K/4K Evaluation Board.





Schematic, Z8 Encore!® 8K/4K Evaluation Board Page 2 of 2



Компания «ЭлектроПласт» предлагает заключение долгосрочных отношений при поставках импортных электронных компонентов на взаимовыгодных условиях!

#### Наши преимущества:

- Оперативные поставки широкого спектра электронных компонентов отечественного и импортного производства напрямую от производителей и с крупнейших мировых складов;
- Поставка более 17-ти миллионов наименований электронных компонентов;
- Поставка сложных, дефицитных, либо снятых с производства позиций;
- Оперативные сроки поставки под заказ (от 5 рабочих дней);
- Экспресс доставка в любую точку России;
- Техническая поддержка проекта, помошь в подборе аналогов, поставка прототипов;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
- Лицензия ФСБ на осуществление работ с использованием сведений, составляющих государственную тайну;
- Поставка специализированных компонентов (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Aeroflex, Peregrine, Syfer, Eurofarad, Texas Instrument, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits, General Dynamics и др.);

Помимо этого, одним из направлений компании «ЭлектроПласт» является направление «Источники питания». Мы предлагаем Вам помошь Конструкторского отдела:

- Подбор оптимального решения, техническое обоснование при выборе компонента;
- Подбор аналогов;
- Консультации по применению компонента;
- Поставка образцов и прототипов;
- Техническая поддержка проекта;
- Защита от снятия компонента с производства.



#### Как с нами связаться

Телефон: 8 (812) 309 58 32 (многоканальный)

Факс: 8 (812) 320-02-42

Электронная почта: [org@eplast1.ru](mailto:org@eplast1.ru)

Адрес: 198099, г. Санкт-Петербург, ул. Калинина, дом 2, корпус 4, литера А.