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Z8F08A28100KITG

Z8 Encore! XP® F082A Series Development Kit

User Manual

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Revision History

Each instance in Revision History reflects a change to this document from its previous revision. For more details, refer to the corresponding pages and appropriate links in the table below.

Date	Revision Level	Description	Page Number
January 2009	06	Updated Hardware section.	1
May 2008	05	Updated Introduction section. Changed 'Z8F08A28100KIT' to 'Z8F08A28100KITG'.	1
March 2008	04	Updated the new Zilog logo, implemented Style Guide, and changed ZiLOG to Zilog. Changed title to Z8 Encore! XP F082A Series Development Kit. Modified Schematics Table 2 to incorporate changes to R15 from 220 Ω to 0 Ω. Added Note 3 to the Schematics.	All
October 2005	03	F08xA Series development board, Corrected typo in MCU features list: updated schematics for board rev C.	6, 9
February 2005	02	Introduction, Corrected Typo in development kit name.	1

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Introduction

Zilog's Z8 Encore! XP® F082A Series microcontroller unit (MCU) is a part of the line of Zilog's MCU products. The Z8 Encore! XP F082A Series MCU development kit (Z8F08A28100KITG) enables you to become familiar with the hardware and software tools available with this product. This kit consists of the 8 KB version of the Z8 Encore! XP development board that supports and presents the features of the Z8 Encore! XP F082A Series. This kit allows you to begin writing application software and contains all supporting documents.

This manual acquaints you with the Z8 Encore! XP F082A Series MCU development kit, and provides instructions on setting up and using the tools to start building designs and applications. Z8F082ASJ020 is the silicon used in the board. For more information, refer to *Z8 Encore! XP® F082A Series Product Specification (PS0228).*
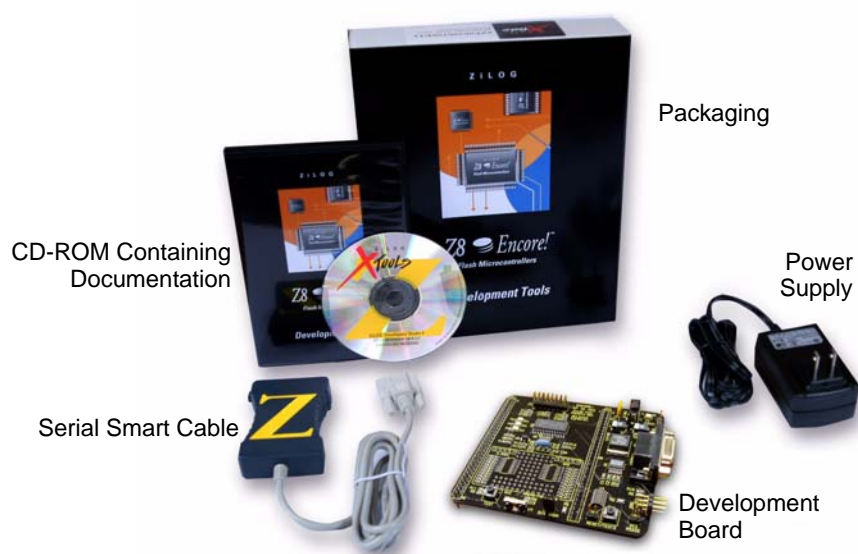
Kit Contents

The Z8 Encore! XP F082A Series MCU development kit contains the following:

Hardware

The hardware in Z8 Encore! XP F082A Series MCU development kit include:

- Z8 Encore! XP F082A Series development board

- USB Smart Cable for PC to Z8 Encore! XP® F082A series development board (previous versions of the development kit used a serial smart cable; for information on using the serial smart cable, refer to your original documentation)

- 5 V DC power supply

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Figure 1. Z8 Encore! XP® F082A Series Development Kit Contents

Software (on CD-ROM)

The software in Z8 Encore! XP F082A Series MCU development kit include:

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

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Documentation

The following documents are included in the Z8 Encore! XP F082A Series development kit:

- 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
  - Application Notes

The sample code is installed with ZDS II and is located in the `<installation directory>\samples` in the disk drive.

The documentation can be installed with the **DemoShield** interface or 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 Requirements

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

- Microsoft Windows XP Professional SP1/Windows 2000 SP3/Windows NT 4.0 SP6/Windows 98 SE
- Pentium II/233 MHz processor or higher up to Pentium IV, 2.8 GHz
- 96 MB RAM or more
- 25 MB hard disk space or more
- Super VGA video adapter

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

Installation

For details on installation and setup of the Z8 Encore! XP F082A Series development kit, refer to *Z8 Encore! XP®/Z8 Encore!® Development Kits Quick Start Guide (QS0043)*.

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Z8 Encore! XP F082A Series Development Board

Introduction

Zilog's Z8 Encore! XP® F082A Series development board is a development and prototyping board for the Z8 Encore! XP F082A Series MCU. The board provides you with a tool to evaluate features of Z8 Encore! XP F082A Series MCU, and to start developing an application before building the hardware.
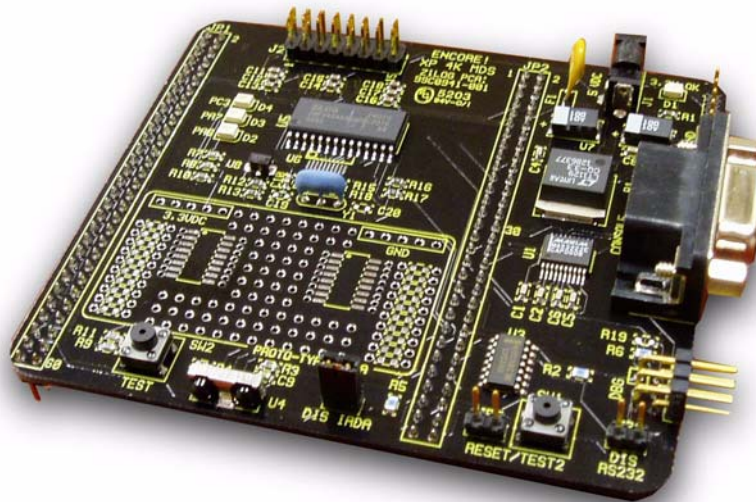

Figure 2. Z8 Encore! XP® F082A Series Development Board

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Features

The features of Z8 Encore! XP® F082A Series development board include:

- Z8 Encore! XP MCU (28-pin SOIC)
- 3 LEDs
- RS-232 interface
- IrDA transceiver
- Two pushbuttons, RESET and TEST
- 5 V DC power connector
- On-Chip Debugger interface
- 20 MHz Ceramic Oscillator (Y1)
- Header for ADC input
- Prototyping area
- External interface connectors JP1 and JP2
- 2.7 V–3.6 V operating voltage with 5 V-tolerant inputs

MCU

The Z8 Encore! XP F082A Series MCU is a member of the family of Zilog MCU products based on 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! XP F082A Series makes it suitable for a variety of applications including motor control, security systems, home appliances, personal electronic devices, and sensors.

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The development board contains circuitry to support and present all the features of the Z8 Encore! XP F082A Series. The key features of the Z8 Encore! XP F082A Series include:

- eZ8 core CPU
- 8 KB Flash memory with in-circuit programming capability
- 1 KB register RAM
- 8-channel, 10-bit Analog-to-Digital Converter (ADC)
- Full-duplex UART
- Infrared Data Association (IrDA)-compliant infrared encoder/decoder
- Two 16-bit timers with capture, compare, and PWM capability
- Watchdog Timer (WDT) with internal RC oscillator
- Eleven (20-pin package) or nineteen (28-pin package) I/O pins
- Programmable priority interrupts
- On-Chip Debugger
- Voltage Brownout (VBO) Protection
- Power-On Reset (POR)
- 2.7 V–3.6 V operating voltage with 5 V-tolerant inputs
- Operating temperatures: 20 °C ±10 °C

For further information on the Z8 Encore!® family of devices, refer to *Z8 Encore! XP® F082A Series Product Specification (PS0228)*, available for download at www.zilog.com.

UART with IrDA Endec

Z8 Encore! XP F082A Series (component U5) contains a fully-functional, high-performance UART with Infrared Encoder/Decoder (ENDEC). The Infrared Endec is integrated with an on-chip UART allowing easy

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communication between the Z8 Encore! XP F082A Series 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 lists 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
JP5	OUT	U5 $\overline{\text{RESET}}$/PD0	PD0 (GPIO)	X
JP5	IN	U5 $\overline{\text{RESET}}$/PD0	$\overline{\text{RESET}}$ when SW1 pressed	
*These jumpers must not be OUT at the same time.				

External Interface Headers JP1 and JP2

External interface headers JP1 and JP2 are displayed in Schematics on page 9.

Schematics

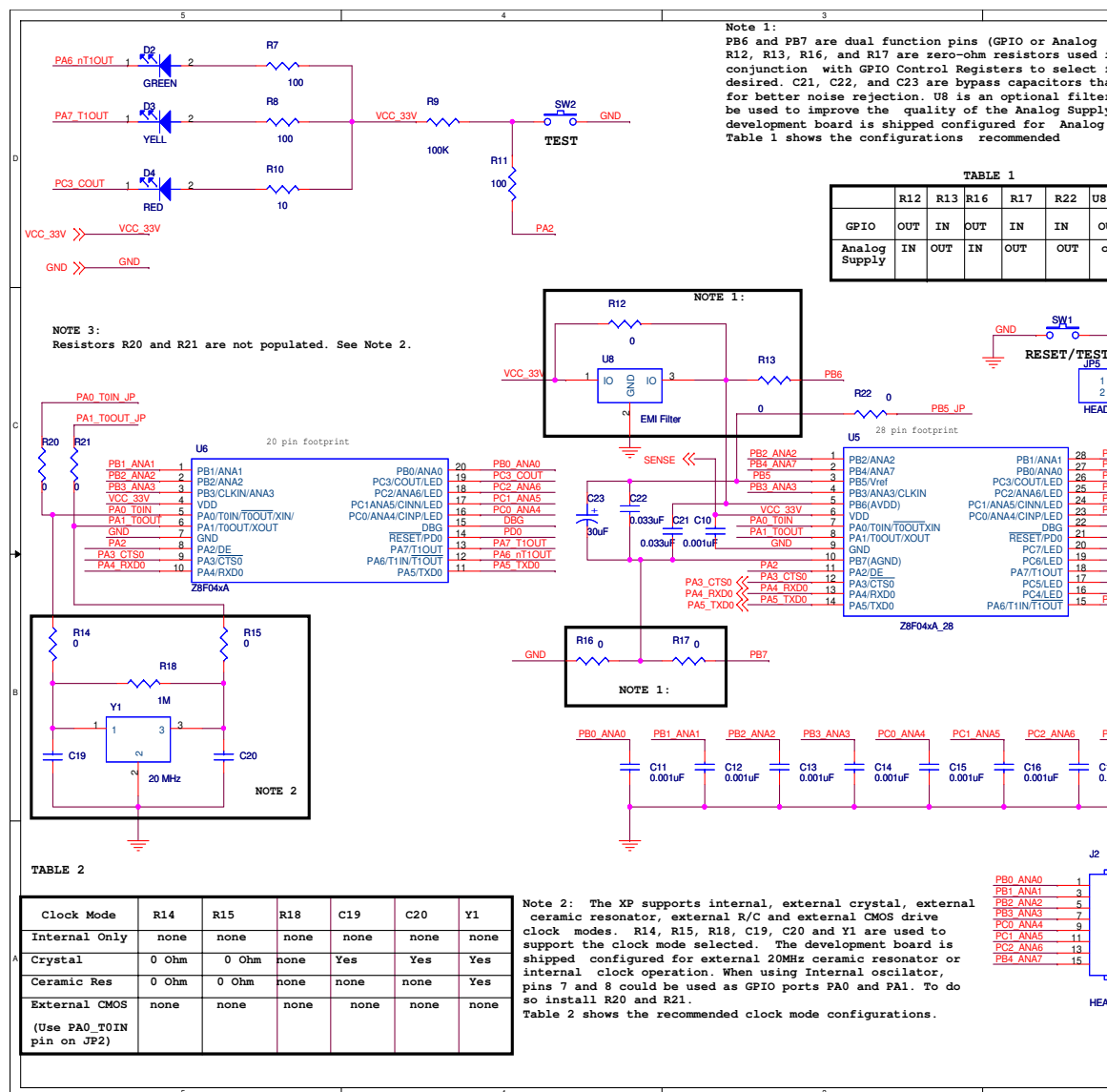Figure 3 and Figure 4 on page 10 display the schematics for Z8 Encore! XP F082A Series

Note 1:
PB6 and PB7 are dual function pins (GPIO or Analog
R12, R13, R16, and R17 are zero-ohm resistors used
conjunction with GPIO Control Registers to select
desired. C21, C22, and C23 are bypass capacitors tha
for better noise rejection. U8 is an optional filte
be used to improve the quality of the Analog Supply
development board is shipped configured for Analog
Table 1 shows the configurations recommended

TABLE 1

	R12	R13	R16	R17	R22	U8
GPIO	OUT	IN	OUT	IN	IN	O
Analog Supply	IN	OUT	IN	OUT	OUT	o

NOTE 3:
Resistors R20 and R21 are not populated. See Note 2.

NOTE 1:

NOTE 2:

TABLE 2

Clock Mode	R14	R15	R18	C19	C20	Y1
Internal Only	none	none	none	none	none	none
Crystal	0 Ohm	0 Ohm	none	Yes	Yes	Yes
Ceramic Res	0 Ohm	0 Ohm	none	none	none	Yes
External CMOS (Use PA0_T0IN pin on JP2)	none	none	none	none	none	none

Note 2: The XP supports internal, external crystal, external
ceramic resonator, external R/C and external CMOS drive
clock modes. R14, R15, R18, C19, C20 and Y1 are used to
support the clock mode selected. The development board is
shipped configured for external 20MHz ceramic resonator or
internal clock operation. When using Internal oscilator,
pins 7 and 8 could be used as GPIO ports PA0 and PA1. To do
so install R20 and R21.
Table 2 shows the recommended clock mode configurations.

Figure 3. Schematic, Z8 Encore! XP® F082A Series MCU Deve

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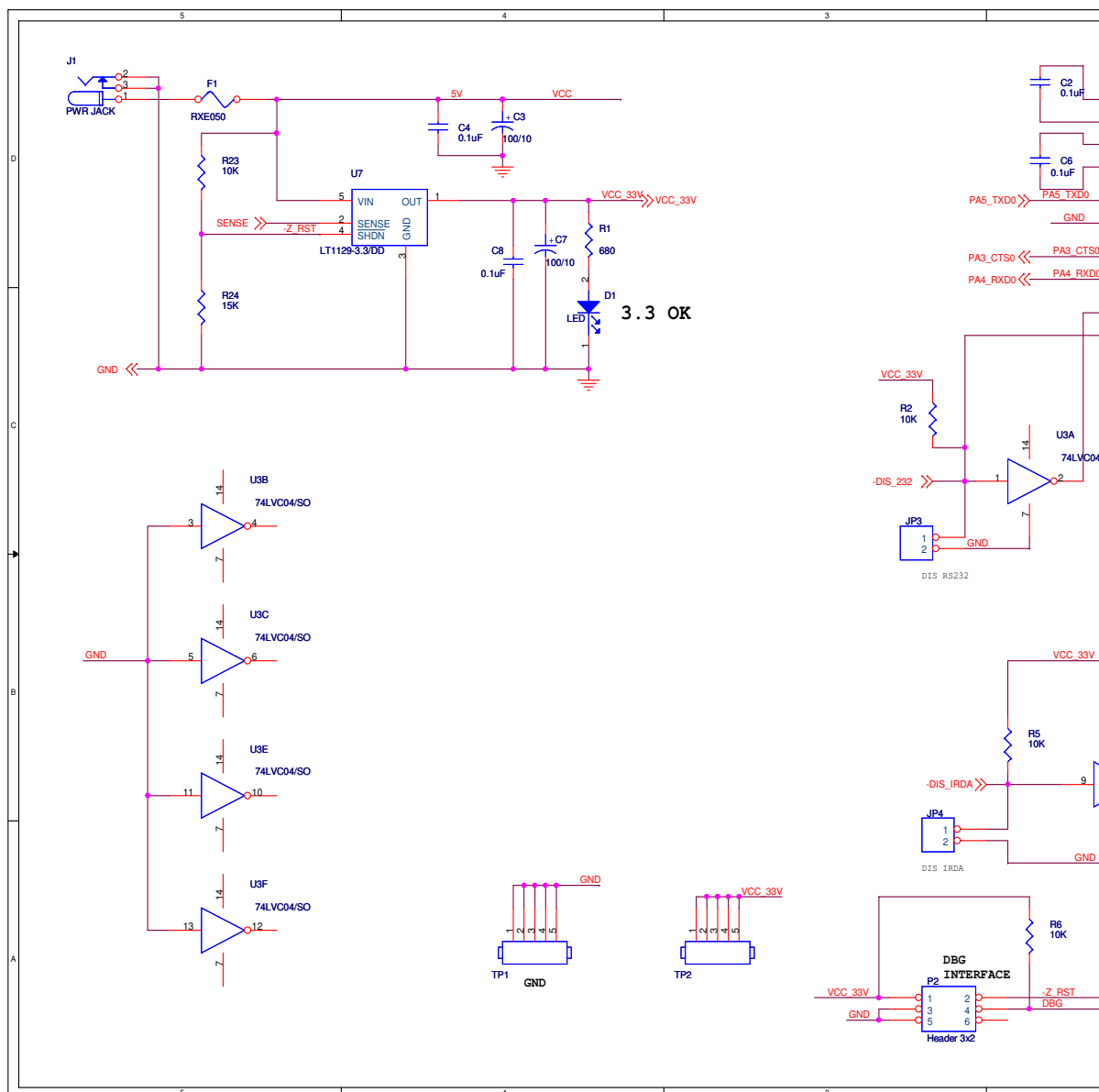
Figure 4. Schematic, Z8 Encore! XP® F082A Series MCU Deve

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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 http://support.zilog.com.

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