



**Z8F083A0128ZCOG**

**Z8 Encore!<sup>®</sup> F083A Series  
Development Kit**

**User Manual**

UM020604-0508



# 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.

<b>Date</b>	<b>Revision Level</b>	<b>Description</b>	<b>Page No</b>
May 2008	04	Updated <a href="#">Introduction</a> section.	<a href="#">1</a>
March 2008	03	Modified Table 2 in Schematics to incorporate changes to R15 from 220 Ohm to 0 Ohm. Added Note 3 to the Schematics.	<a href="#">8, 9</a>
December 2007	02	Updated Zilog logo, Zilog text, Disclaimer section, and implemented style guide. Removed XP from Z8 Encore! XP F0830/F083A.	All
July 2006	01	Original issue.	All



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# Introduction

Zilog's Z8 Encore!® F083A Series MCU is part of the line of Zilog® microcontroller products. The Z8 Encore! F083A Series MCU Development Kit (Z8F083A0128ZCOG) 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! development board that supports and presents the features of the Z8 Encore! F083A Series. This kit allows you to write application software and contains all the supporting documents.

The Z8 Encore! F083A Series devices support up to 8 KB Flash Program Memory and 256 B register RAM that is pin-for-pin compatible with the award-winning Z8 Encore! XP F0822 Series Flash Microcontrollers family.

The Z8 Encore! F083A Series device features up to eight channels of fast analog-to-digital conversion (2.15  $\mu$ s). The ADC on the Z8 Encore! F083A is one of the fastest 10-bit ADCs available in a 28-pin or smaller package. The Z8 Encore! F083A is built for speed to handle rigorous application requirements for motor control, sensor interfacing, ballast control, and appliance controls. The single-pin debugger and programming interface simplifies code development and allows easy in-circuit programming.

This user manual acquaints you with the Z8 Encore! F083A Series MCU Development Kit, and gives instructions on setting up and using the tools to start building designs and applications. Z8F083ASJ020 is the silicon used in the board. For more information, refer to *Z8 Encore!® F083A Series Product Specification (PS0263)*.



## Kit Contents

For information on kit contents, refer to *Z8 Encore! XP®/Z8 Encore!® (F0822, F082A, F1680, and F083A Series) Development Kits Quick Start Guide (QS0043)*.

# Installation

For software installation and setup of the Z8 Encore!® F083A Series Development Kit, refer to *Z8 Encore! XP®/Z8 Encore!® (F0822, F082A, F1680, and F083A Series) Development Kits Quick Start Guide (QS0043)*.

# Z8 Encore!® F083A Series Development Board

## Introduction

The Z8 Encore!® F083A Series Development Board is a development and prototyping board for the Z8 Encore! F083A Series MCU. The board provides a tool to evaluate features of Z8 Encore! F083A Series MCU, and to start developing an application before building the hardware.

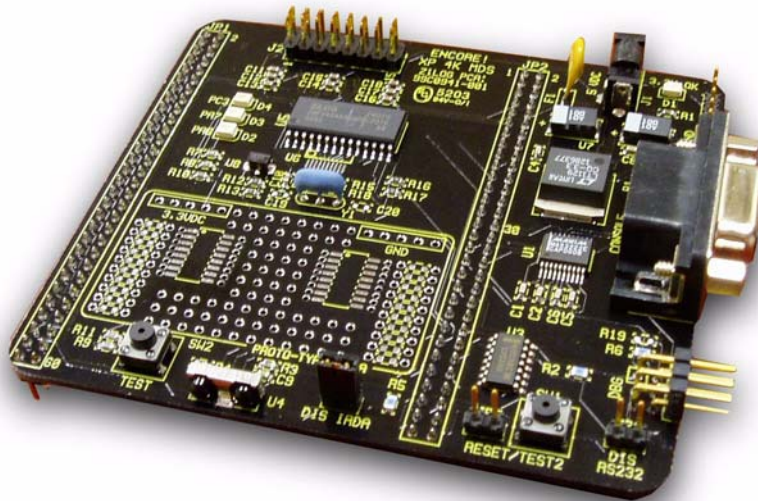


Figure 1. Z8 Encore!® F083A Series Development Board  
(see [Schematic](#) on page 7 for details on components not installed on this board)

## Features

The key features of Z8 Encore! F083A Series include:

- 20 MHz eZ8 CPU
- Up to 8 KB Flash memory with in-circuit programming capability
- Up to 256 B register RAM
- 100 B non-volatile data storage (NVDS)
- Up to 23 I/O pins depending upon package
- Internal precision oscillator (IPO)
- External crystal oscillator
- Two enhanced 16-bit timers with capture, compare, and PWM capability
- Watchdog Timer (WDT) with dedicated internal RC oscillator
- Single-pin, On-Chip Debugger (OCD)
- Fast 8-channel, 10-bit analog-to-digital converter (ADC)
- On-chip analog comparator
- Up to 18 vectored interrupts
- Voltage Brownout (VBO) protection
- Power-On Reset (POR)
- 2.7 V to 3.6 V operating voltage
- Up to thirteen 5 V tolerant input pins
- 20- and 28-pin packages
- 0 °C to +70 °C standard temperature range and -40 °C to +105 °C extended temperature operating ranges



## MCU

The Z8 Encore! F083A Series MCU is member of a family of Zilog<sup>®</sup> microcontroller 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<sup>®</sup> instructions. The successive approximation register (SAR) ADC on the Z8 Encore! F083A is one of the fastest 10-bit ADCs available in a 28-pin or smaller package. The Z8 Encore! F083A is built for speed to handle rigorous application requirements for motor control, sensor interfacing, ballast control, and appliance controls.

The development board contains circuitry to support and present all the features of the Z8 Encore! F083A Series. For more information on the Z8 Encore!<sup>®</sup> family of devices, refer to *Z8 Encore!<sup>®</sup> F083A Series Product Specification (PS0263)* available for download at [www.zilog.com](http://www.zilog.com).

## Jumper Settings

The only jumper available on the Z8 Encore! F083A development board is JP5, which affects U5  $\overline{\text{RESET}}$ /PD0. Set JP5 as follows:

- JP5 OUT (default): PD0 (GPIO)
- JP5 IN:  $\overline{\text{RESET}}$  when SW1 pressed

## External Interface Headers JP1 and JP2

Figure 2 on page 8 displays the external interface headers JP1 and JP2.

# Schematic

This section includes schematics for the Z8 Encore!® F083A Series Development Board (see [Figure 2](#) and [Figure 3](#) on page 9).

The following components appear in the schematic but are not installed on the board:

- C1, C2, C5, C6, C9, C11 through C18
- JP3, JP4
- P1
- R2 through R5
- U1, U3, U4

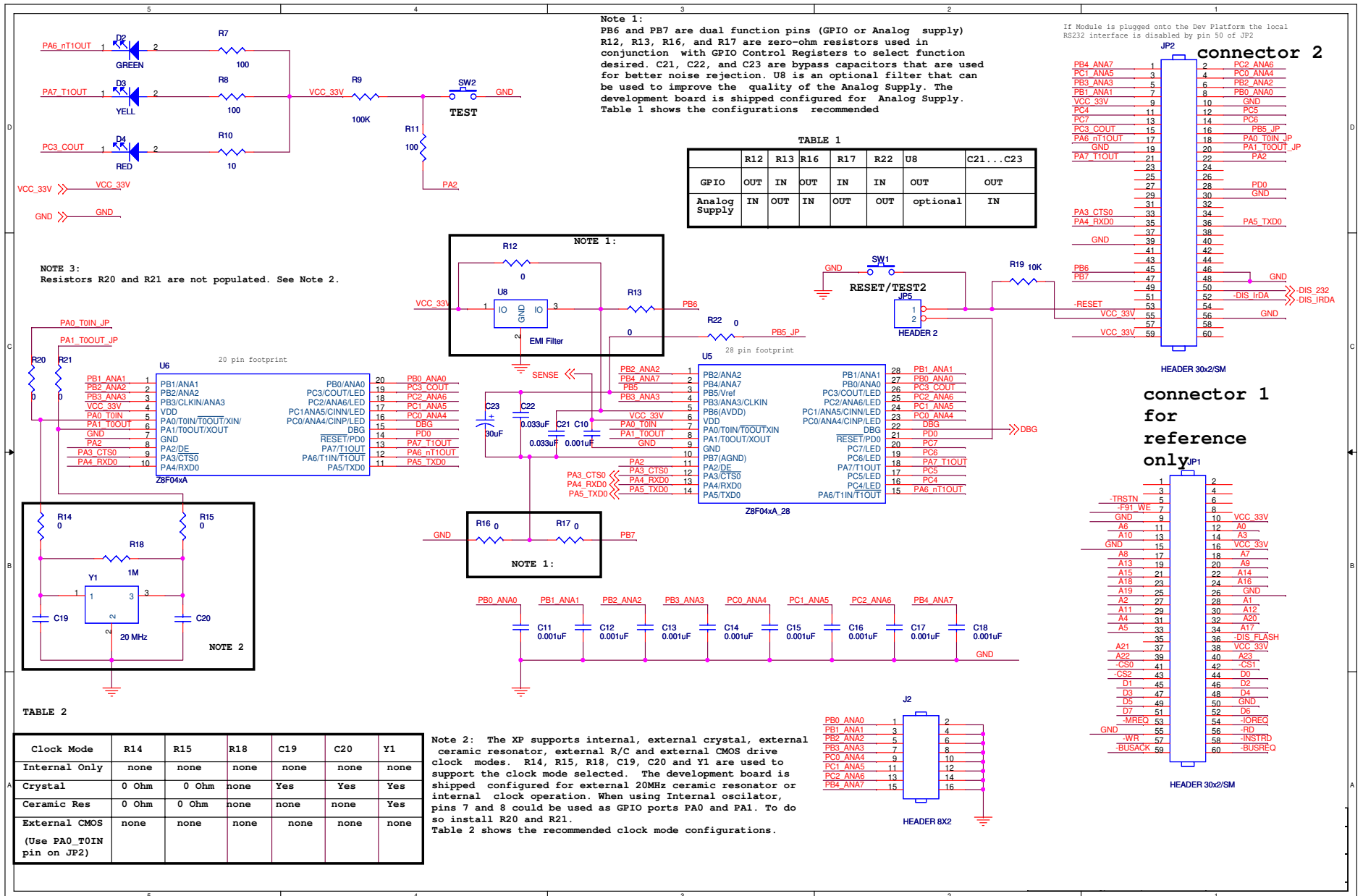


Figure 2. Schematic, Z8 Encore!® F083A Series MCU Development Board

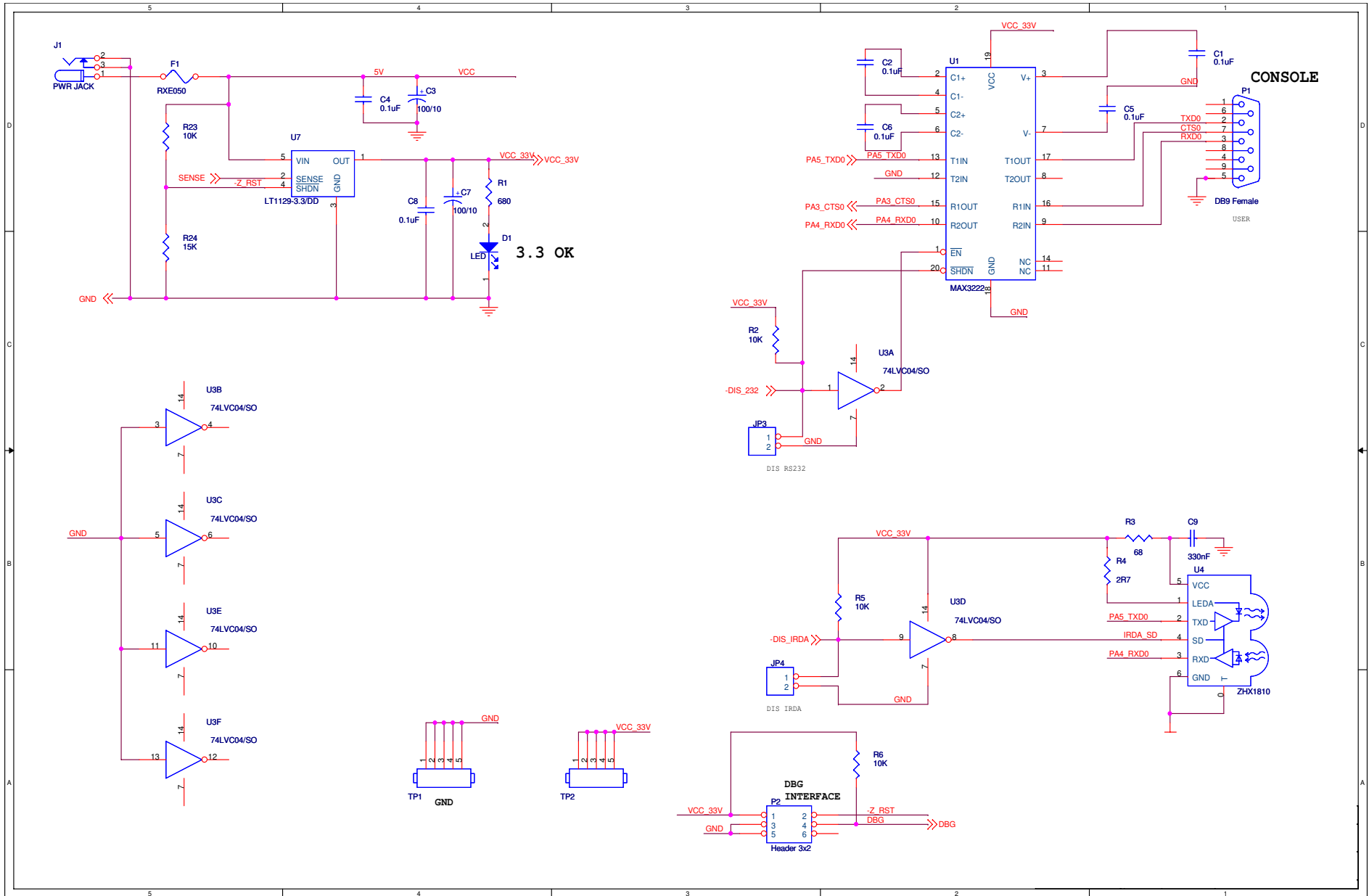


Figure 3. Schematic, Z8 Encore!® F083A Series MCU Development Board



# 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>.



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

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