



***Z8F08A28100KIT***

***Z8 Encore! XP<sup>®</sup> F08xA Series  
Development Kit***

**User Manual**

UM018603-1005

**Z8 Encore! XP® F08xA Series Development Kit  
User Manual**



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  
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concerning the devices, applications, or technology described is intended to suggest possible uses and may be superseded.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. Devices sold by ZiLOG, Inc. are covered by warranty and limitation of liability provisions appearing in the ZiLOG, Inc. Terms and Conditions of Sale. ZiLOG, Inc. makes no warranty of merchantability or fitness for any purpose 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.



## *Revision History*

Each instance in Table 1 reflects a change to this document from its previous revision. To see more detail, click the appropriate link in the table.

**Table 1. Revision History of this Document**

<b>Date</b>	<b>Revision Level</b>	<b>Section</b>	<b>Description</b>	<b>Page #</b>
Feb. 2005	2	Introduction	Corrected typo in development kit name.	1
October 2005	3	F08xA Series Development Boar	Corrected typo in the MCU features list; updated schematic for board rev C.	8, 13



## *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).



# *Table of Contents*

Revision History	iii
Safeguards	iv
Table of Contents	v
List of Figures	v
Introduction	1
Kit Contents	1
Hardware	1
Software (on CD-ROM)	2
Documentation	2
System/Software Requirements	3
Supported Host System Configuration	3
Installation	5
F08xA Series	
Development Board	7
Introduction	7
Features	8
MCU	8
UART with IrDA Endec	9
Power and Communication Interfaces	10
External Interface Headers JP1 and JP2	10
Schematic	11

**Z8 Encore! XP® F08xA Series Development Kit  
User Manual**

vi





## *List of Figures*

- Figure 1. Z8 Encore! XP® F08xA Series Development Kit Contents .2  
Figure 2. Z8 Encore! XP® F08xA Series Development Board . . . . .7

**Z8 Encore! XP® F08xA Series Development Kit  
User Manual**

vi







# *Introduction*

The Z8 Encore! XP<sup>®</sup> F08xA Series MCU is part of the line of ZiLOG microcontroller products.

The Z8 Encore! XP<sup>®</sup> F08xA Series MCU Development Kit (Z8F08A28100KIT) 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! Development board that supports and presents the features of the Z8 Encore! XP F08xA Series. This kit allows users to begin writing application software and contains all supporting documents.

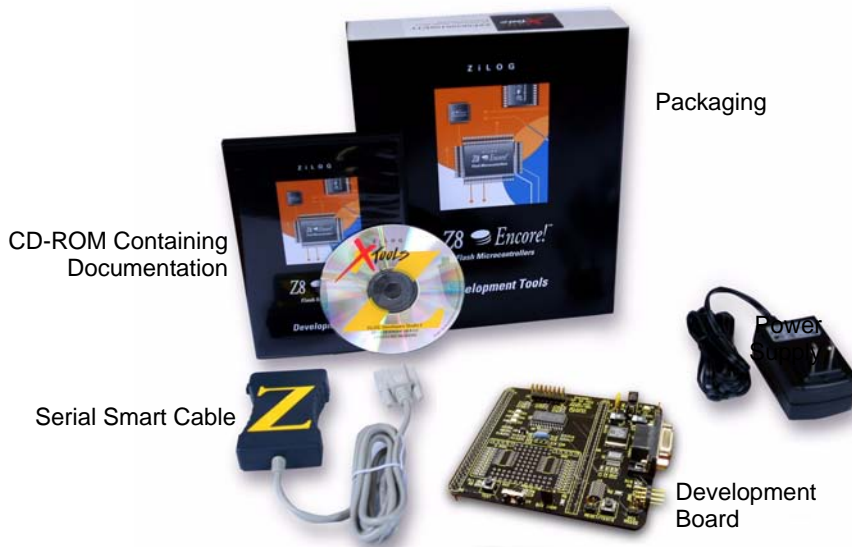
This manual acquaints users with the Z8 Encore! XP F08xA Series MCU Development Kit, and gives instructions on setting up and using the tools to start building designs and applications.

## **Kit Contents**

The Z8 Encore! XP F08xA Series MCU Development Kit contains the following:

### **Hardware**

- Z8 Encore! XP F08xA Series Development board
- Serial Smart Cable for PC to Z8 Encore! XP F08xA Series Development board (DB9 to six-pin male)
- 5VDC power supply



**Figure 1. Z8 Encore! XP® F08xA Series Development 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! XP F08xA 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 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 Professional Service Pack 1
- PentiumII/233MHz 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
- CD-ROM
- One or more RS-232 communication ports

**Z8 Encore! XP® F08xA Series Development Kit  
User Manual**

4





# *Installation*

Follow the directions in the Quick Start Guide for software installation and setup of the Z8 Encore! XP® F08xA Series Development kit.

**Z8 Encore! XP® F08xA Series Development Kit  
User Manual**

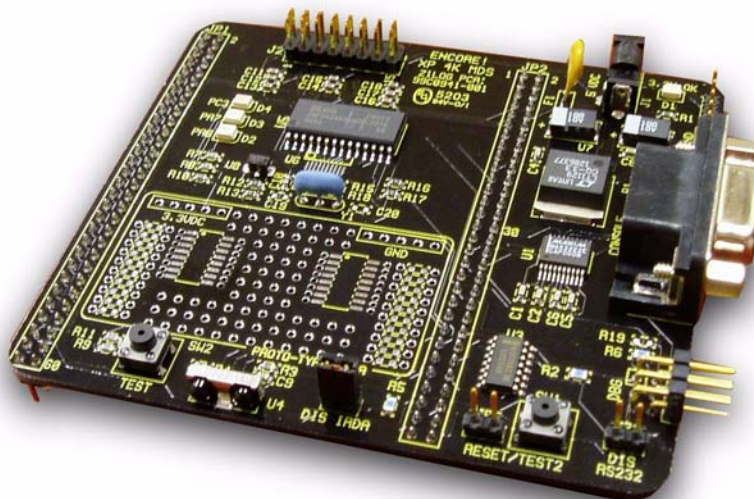
**6**



# *F08xA Series Development Board*

## **Introduction**

The Z8 Encore! XP® F08xA Series Development board is a development and prototyping board for the Z8 Encore! XP F08xA Series MCU. The board provides customers with a tool to evaluate features of Z8 Encore! XP F08xA Series MCU, and to start developing an application before building the hardware.



**Figure 1. Z8 Encore! XP® F08xA Series Development Board**



## Features

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

## MCU

The Z8 Encore! XP F08xA Series MCU is member of a family of ZiLOG 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® instructions. The rich peripheral set of the Z8 Encore! XP F08xA Series makes it suitable for a variety of 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 F08xA Series. The main features of the Z8 Encore! XP F08xA Series are:





- eZ8 core CPU
- 8KB Flash memory with in-circuit programming capability
- 1KB 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
- Watch-Dog 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 Brown-out Protection (VBO)
- Power-On Reset (POR)
- 2.7–3.6 V operating voltage with 5V-tolerant inputs
- Operating temperatures:  $20^{\circ} \pm 10^{\circ} \text{C}$

For further information on the Z8 Encore!® family of devices, consult the product specification, P/N PS0247, available for download from [www.zilog.com](http://www.zilog.com).

## UART with IrDA Endec

The Z8 Encore! XP F08xA 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 communication between the Z8 Encore!® XP F08xA 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 provides jumper information concerning the shunt status, functions, devices and defaults affected of jumpers JP3 and JP4.

**Table 1. Jumpers JP3 and JP4**

<b>Jumper</b>	<b>Status</b>	<b>Device Affected</b>	<b>Status</b>	<b>Default</b>
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	

Note: \* These jumpers must not be OUT at the same time

## External Interface Headers JP1 and JP2

External interface headers JP1 and JP2 are shown in the schematic on page 13.



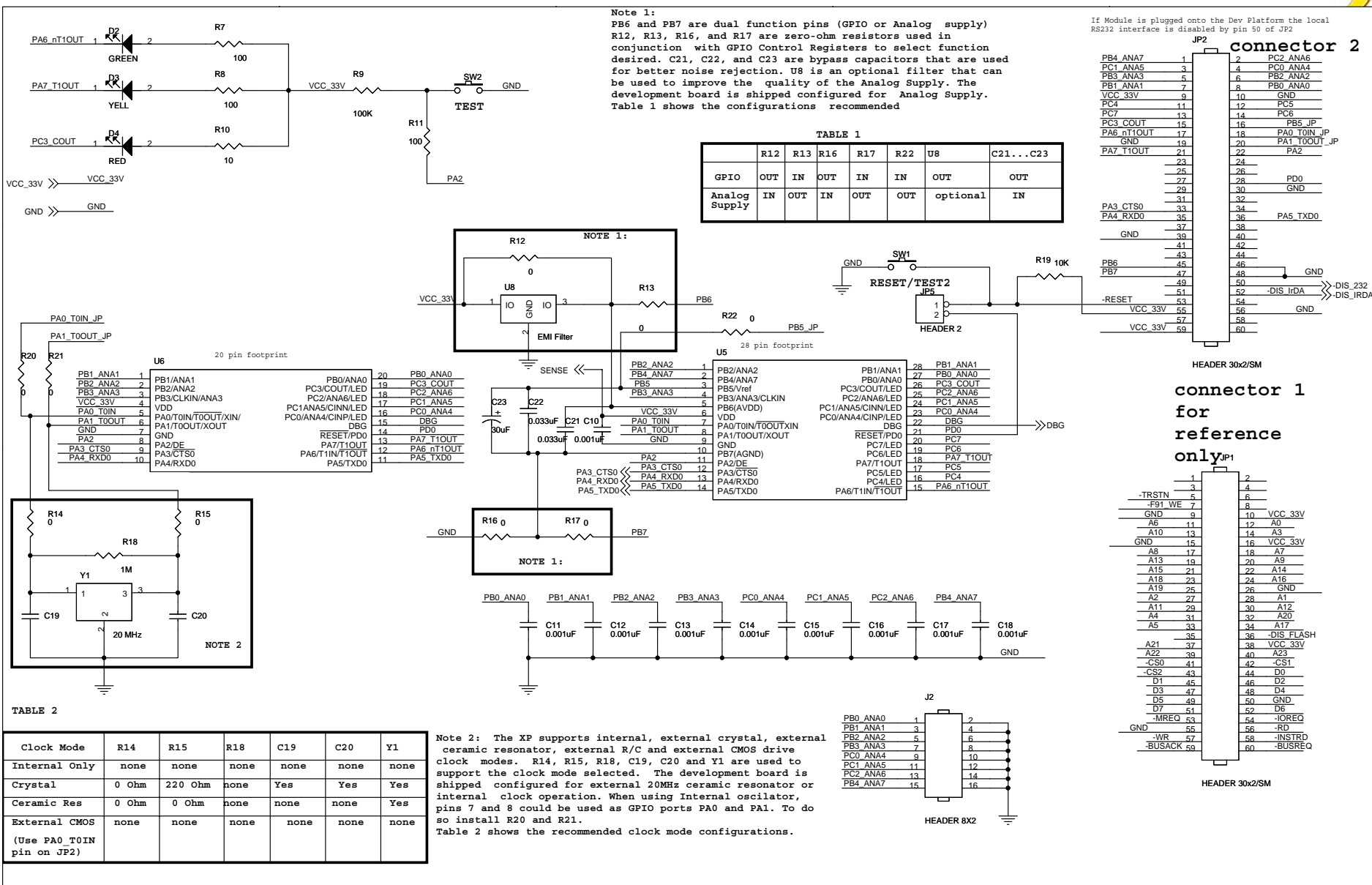
## *Schematic*

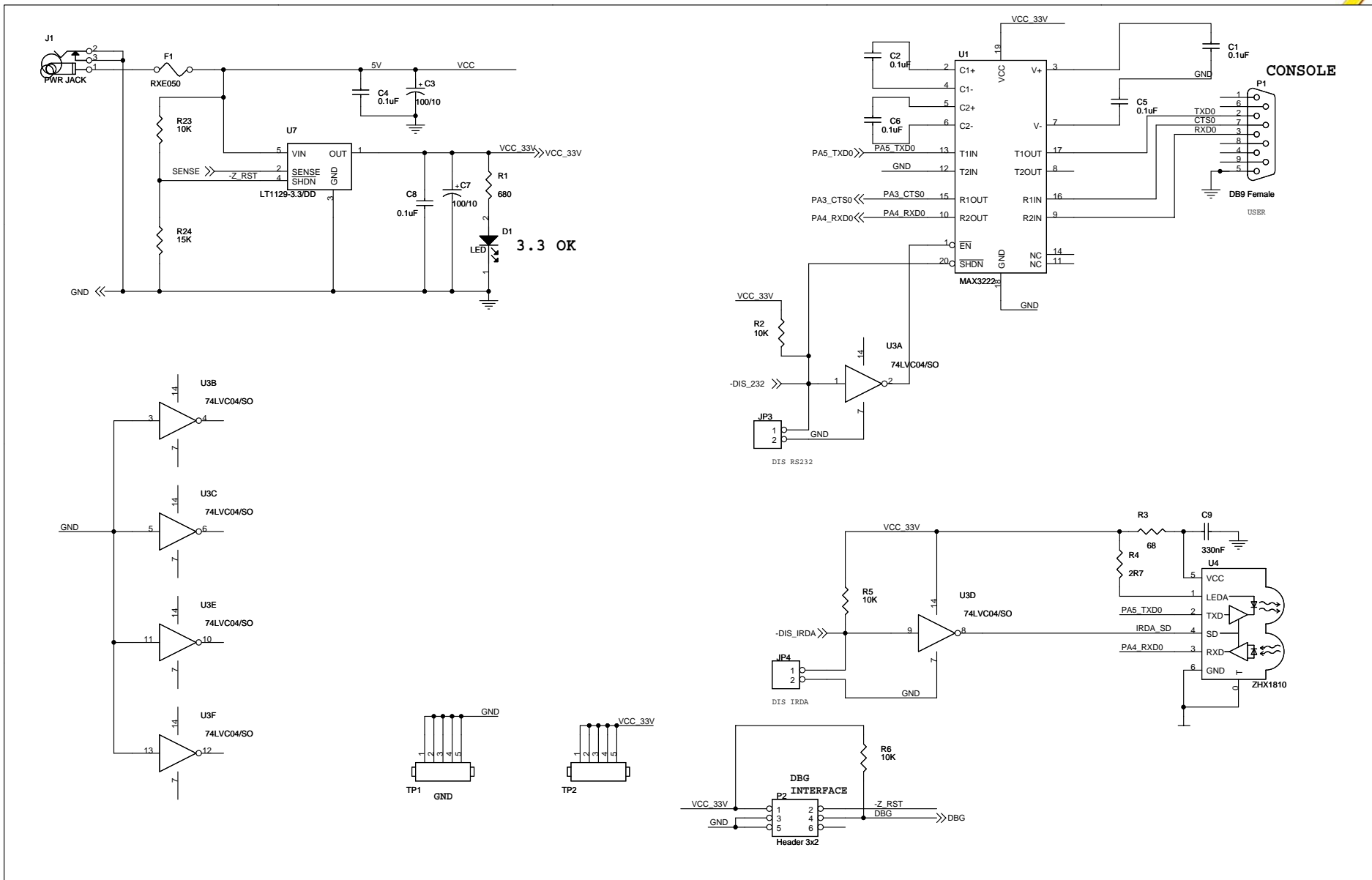
This section includes schematics for the Z8 Encore! XP<sup>®</sup> F08xA Series Development Board.

**Z8 Encore! XP<sup>®</sup> F08xA Series Development Kit  
User Manual**

12







Schematic, Z8 Encore! XP<sup>®</sup> F08xA Series MCU Development Board, Page 2 of 2



**Стандарт  
Электрон  
Связь**

Мы молодая и активно развивающаяся компания в области поставок электронных компонентов. Мы поставляем электронные компоненты отечественного и импортного производства напрямую от производителей и с крупнейших складов мира.

Благодаря сотрудничеству с мировыми поставщиками мы осуществляем комплексные и плановые поставки широчайшего спектра электронных компонентов.

Собственная эффективная логистика и склад в обеспечивает надежную поставку продукции в точно указанные сроки по всей России.

Мы осуществляем техническую поддержку нашим клиентам и предпродажную проверку качества продукции. На все поставляемые продукты мы предоставляем гарантию .

Осуществляем поставки продукции под контролем ВП МО РФ на предприятия военно-промышленного комплекса России , а также работаем в рамках 275 ФЗ с открытием отдельных счетов в уполномоченном банке. Система менеджмента качества компании соответствует требованиям ГОСТ ISO 9001.

Минимальные сроки поставки, гибкие цены, неограниченный ассортимент и индивидуальный подход к клиентам являются основой для выстраивания долгосрочного и эффективного сотрудничества с предприятиями радиоэлектронной промышленности, предприятиями ВПК и научно-исследовательскими институтами России.

С нами вы становитесь еще успешнее!

**Наши контакты:**

**Телефон:** +7 812 627 14 35

**Электронная почта:** [sales@st-electron.ru](mailto:sales@st-electron.ru)

**Адрес:** 198099, Санкт-Петербург,  
Промышленная ул, дом № 19, литера Н,  
помещение 100-Н Офис 331