Z8ENCORE000ZCO

Z8 Encore!® Flash Microcontroller Development Kit

User Manual

PRELIMINARY

UM014603-0903

ZiLOG Worldwide Headquarters • 532 Race Street • San Jose, CA 95126-3432
Telephone: 408.558.8500 • Fax: 408.558.8300 • www.zilog.com

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

Document Disclaimer

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

List of Figures

List of Tables

Introduction

The Z8 Encore!® Flash Microcontroller (MCU) is the first in the new line of ZiLOG microcontroller products. This board supports the Z8 Encore!® and introduces Flash to the Z8® line of microcontrollers.

The Z8 Encore!® Development Kit (Z8ENCORE000ZCO) allows users to become familiar with the hardware and software tools available with this product. This kit consists of the 64KB version of the Z8 Encore!® Evaluation board that supports and presents the features of the Z8 Encore!®. The software development tool kit allows users to begin writing application software and contains all supporting documents.

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

Kit Contents

The Z8 Encore!® Flash Microcontroller Development Kit contains the following:

Hardware

- Z8 Encore!® Evaluation board
- Smart cable for PC to Z8 Encore!® evaluation board (DB9 to six-pin male)
- 9VDC universal power supply (for more detail see Figure 3 on page 6)

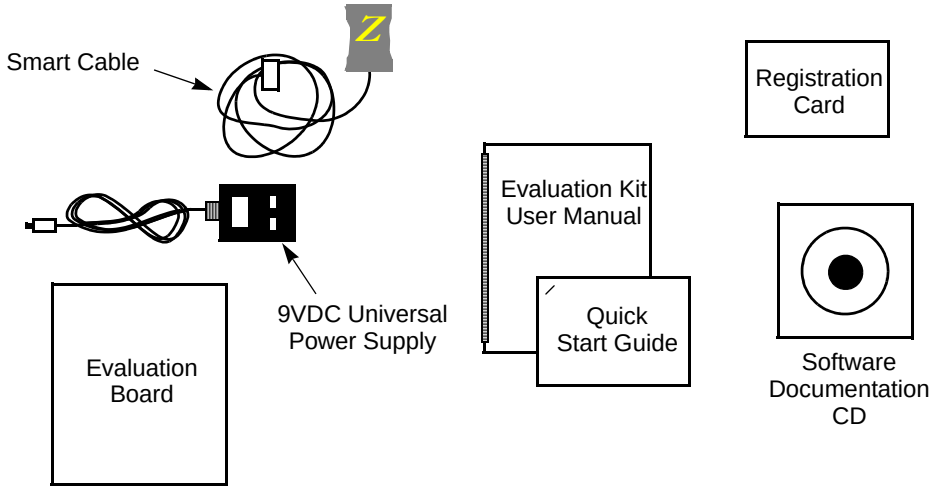


Figure 1. Z8 Encore!® Development Kit Contents

Software (on CD-ROM)

- ZDS II- Z8 Encore!® IDE with ANSI C-Compiler
- Sample code
- Device driver software
- Document browser
- Acrobat Reader install program

Documentation

- Quick Start Guide
- Development Kit User Manual
- Programmer's Reference Sheet
- Registration card

- Z8 Encore!® technical documentation (on CD-ROM)
  - ZDS II - IDE User Manual
  - eZ8 CPU User Manual
  - Product Specification
  - Product briefs
  - Application notes
  - Programmer's Reference Sheet
  - Flyers
  - Product Line Card

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

The device driver software is installed with ZDS II and resides in the `<installation directoryu>\applications\Z864xx\Z864xx_DriversDemo` 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 recommended 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

This chapter describes the installation of hardware and software tools for the Z8 Encore!® Evaluation Kit. The first section describes setting up the evaluation board and substituting plug configurations of the universal 9VDC power supply. The second section describes installing the ZDS II IDE Z8 Encore!® software.

Setting up the Evaluation Board

The PC communicates with the Z8 Encore! Flash Microcontroller Evaluation board using the serial port of the PC. A Z8 Encore!® Smart Cable converts the RS-232 signals into the 3.3V bidirectional open-drain signal needed to communicate with the on-chip debugger of the eZ8. This Z8 Encore!® Smart Cable is a small circuit board with an attached cable and a six-pin right angle female connector that attaches to the evaluation board.

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

1. Connect the serial port of the PC to the Z8 Encore! Smart Cable female DB9 connector.
2. Connect the Z8 Encore! Smart Cable to the Z8 Encore Flash Microcontroller evaluation board pin header P4.
3. Connect the 9VDC universal power supply to the evaluation board, then to an electrical outlet.

See Figure 2 for the Z8 Encore!® Development Kit external connections.

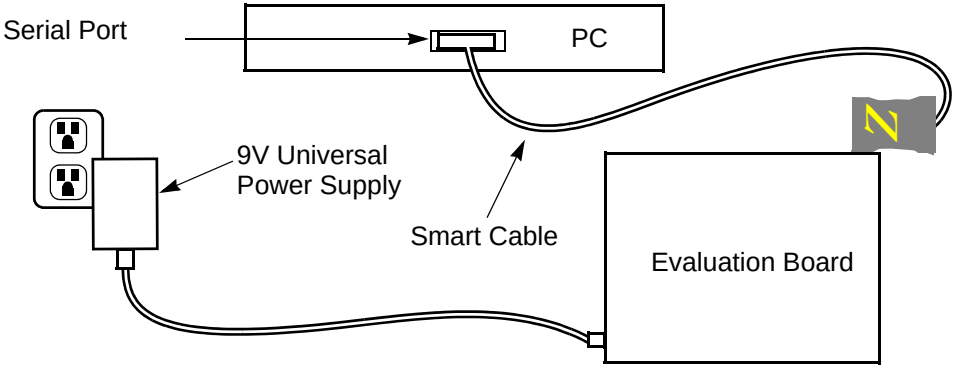


Figure 2. Evaluation Board External Connections

Changing the Universal 9VDC Power Supply Plug Configurations

Figure 3 illustrates the contents of the Universal Power Supply kit.

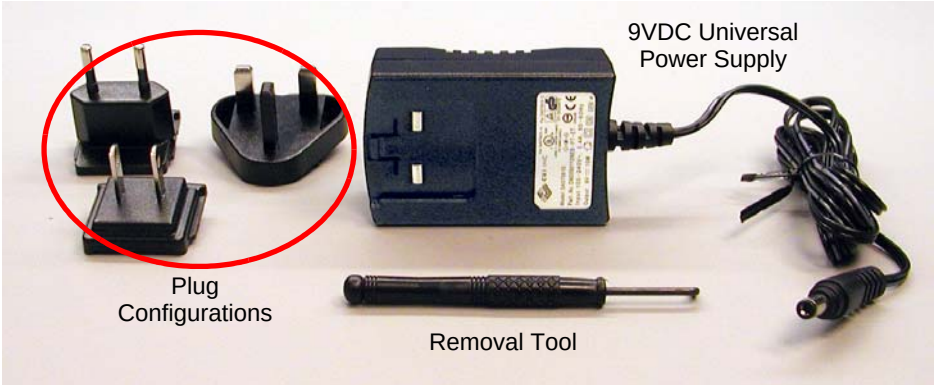


Figure 3. 9VDC Universal Power Supply Components

The universal 9VDC power supply features three different plug configurations (in circle), the power supply itself and a tool that aids in removing one plug configuration to insert another.

To substitute one plug configuration for another, follow these steps:

1. Using the removal tool, place it in the round hole at the top of the current plug configuration.
2. Press down to disengage the keeper tab and push the plug configuration out of its slot.
3. Select the plug configuration of choice for your location, and insert it into the slot left by the previous plug configuration.
4. Push the new plug configuration down until it snaps into place (Figure 4).

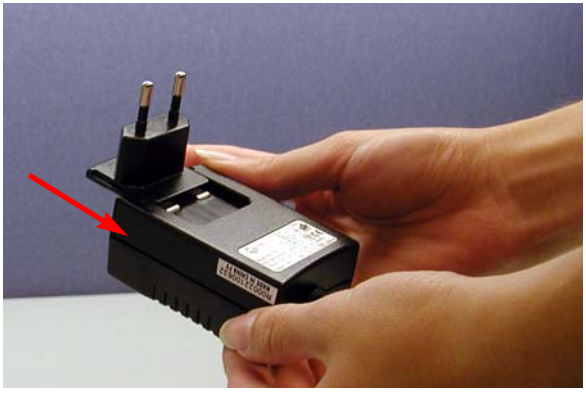


Figure 4. Inserting a New Plug Configuration

Installing the ZDS-II Z8 Encore!® Software

Perform the following steps to install the software tools:

1. Load the ZDS II-Z8 Encore® Flash Microcontroller CD into the CD-ROM drive of the host PC. The CD launches DemoShield automati-

cally and provides a menu to install the product and documentation. Selecting INSTALL PRODUCTS followed by INSTALL ZDS II displays the Installation Wizard (Figure 5).

Note: Software versions shown in the following illustrations are for reference only. You may have an updated version.

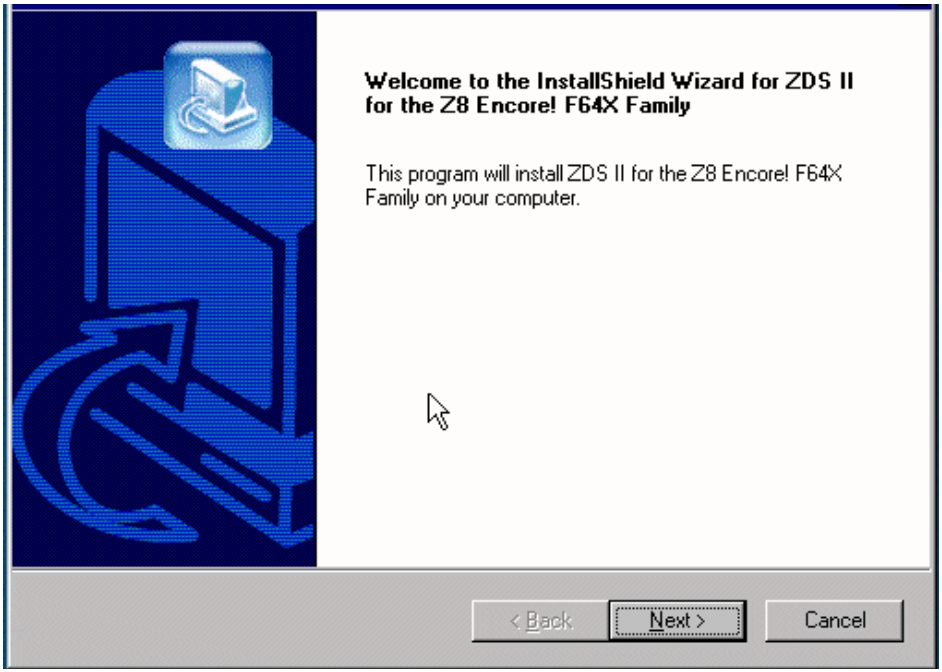


Figure 5. Installation Wizard (Reference Only)

2. Click Next> to continue with the installation. The License Agreement appears (Figure 6).

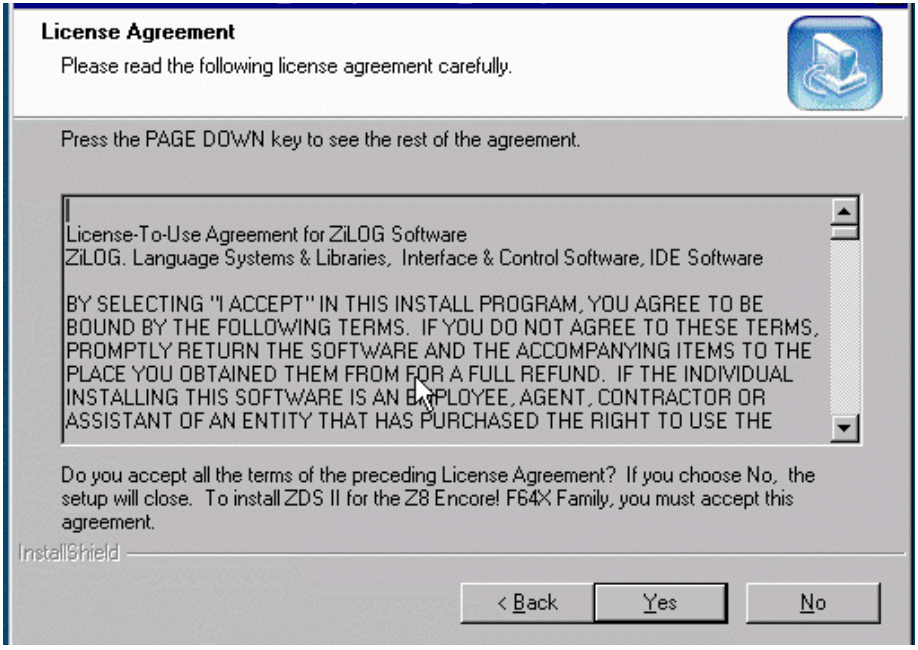


Figure 6. License Agreement (Reference Only)

3. Select Yes to accept the agreement and proceed with the installation.
4. After selecting Yes, the Choose Destiation Location screen appears. follow the directions on the screen and choose whether to install ZDS II in the default location or in some other folder. Click on Next>.

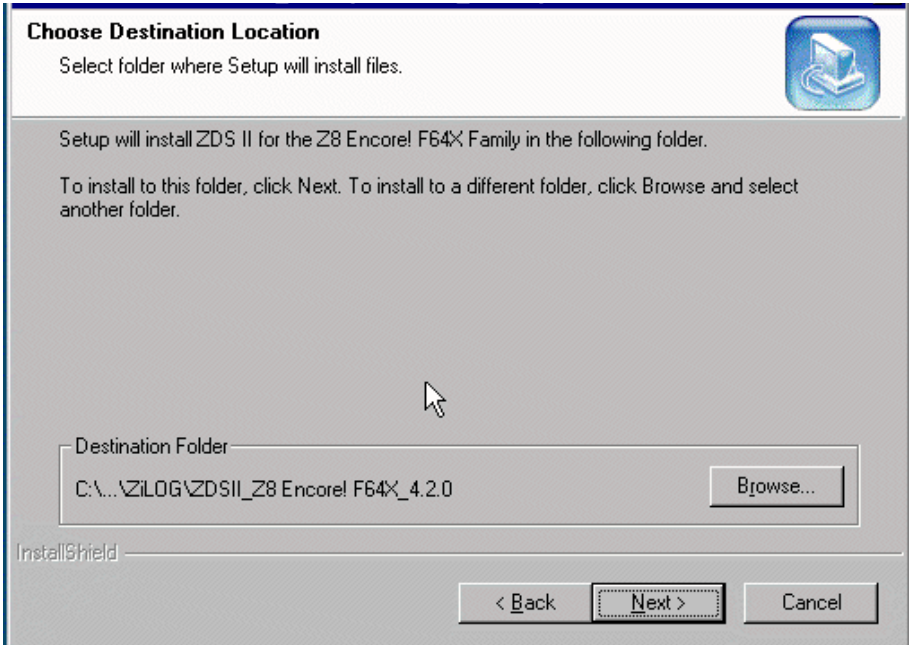


Figure 7. Destination Location Screen

5. The Select Program folder screen appears. Follow the directions on the screen and click on Next>.

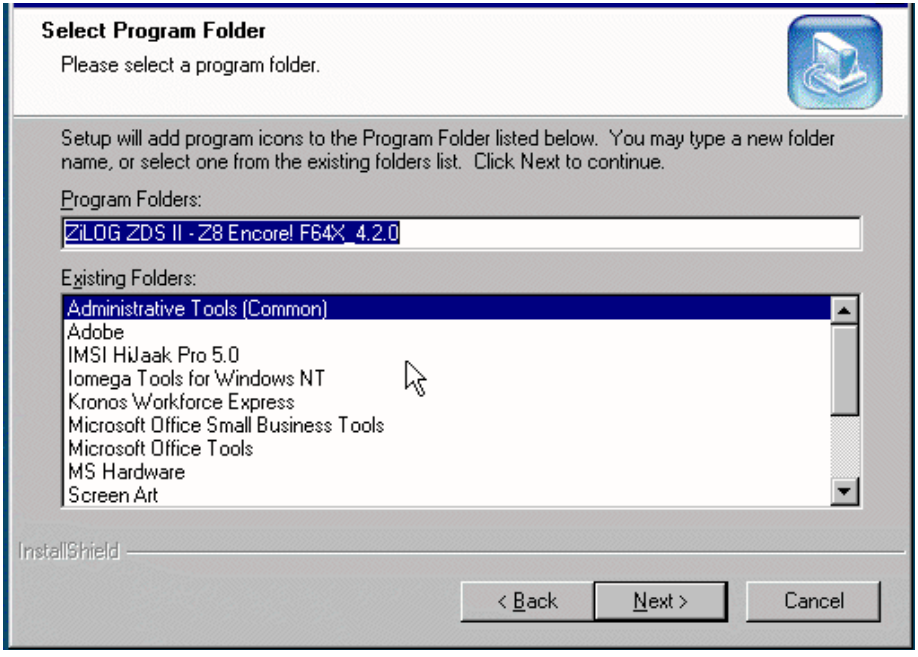


Figure 8. Select Program Folder

6. After selecting Next>, the Installation Wizard completes the installation.
7. When the installation is complete, another screen (Figure 9) appears asking you to register the product online at www.zilog.com. To register at a later time the registration link to the internet site is provided in the ZDS II Help menu.

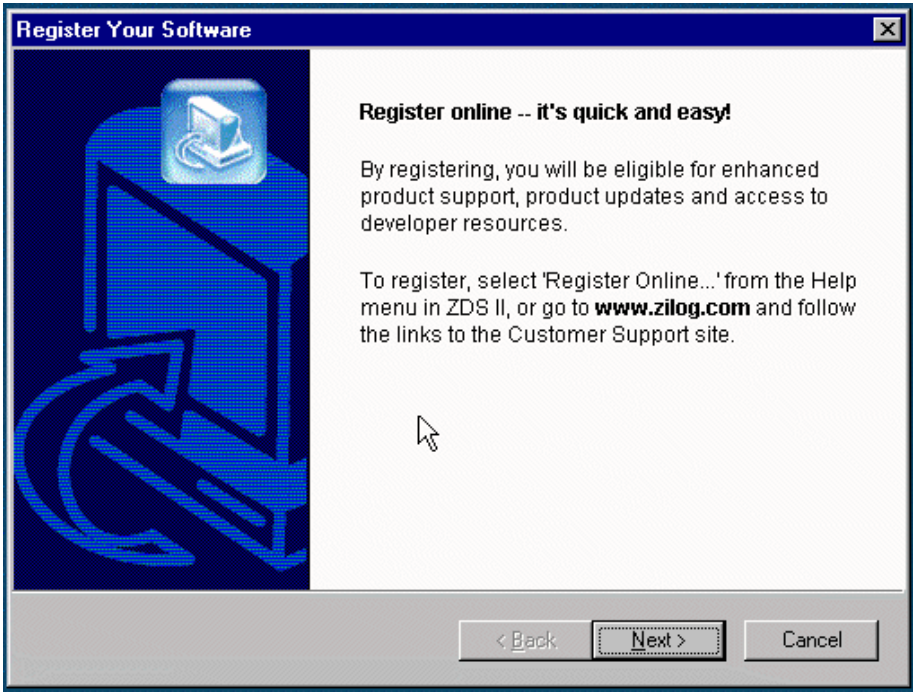


Figure 9. Register Your Software Screen (Reference Only)

8. The following directory is installed on the host PC, assuming all installation settings remain at their defaults:
   `C:/Program Files/ZiLOG/ZDS II_Z8_Encore! F64X_4.2.0.`

Getting Started

Using ZDS II

Perform the following procedure to open an existing project.

1. Connect the Evaluation board to the host PC's serial communications port using the Smart Cable.
2. Apply 9VDC power to the Evaluation board.
3. Run the ZDS II Software (`Start` > `Programs` > `ZDS II-Z8 Encore! F64X_4.2.0>ZDS II-28 Encore! F64X_4.2.0`.
4. Select Open Project from the File menu. The Open Project dialog box appears. See Figure 10.

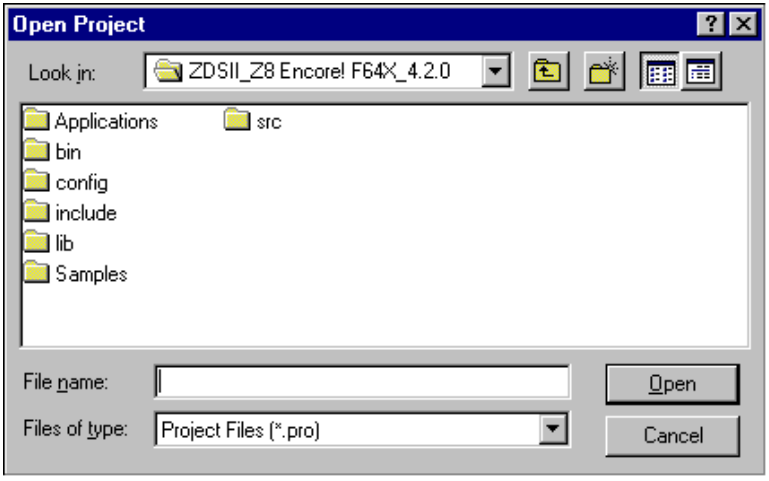


Figure 10. Open Project Dialog Box

5. Select samples. The samples folder appears (Figure 11).

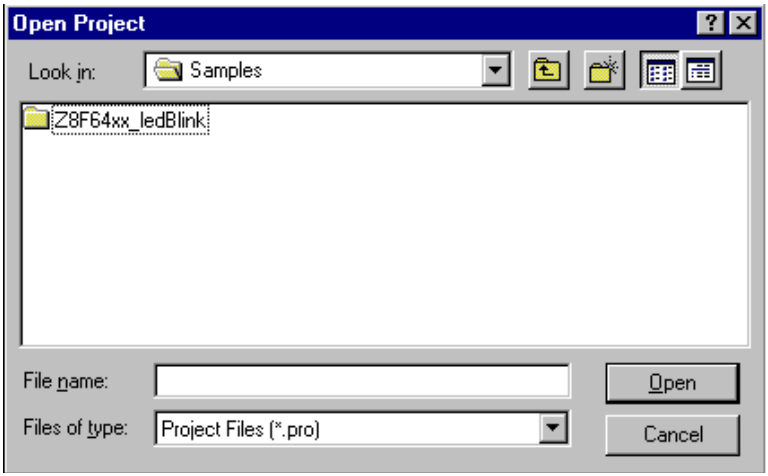


Figure 11. Sample Directory

6. Select the Z8F64xx_ledBlink folder and then the src folder to access the project file named ledBlink.pro. See Figure 12.

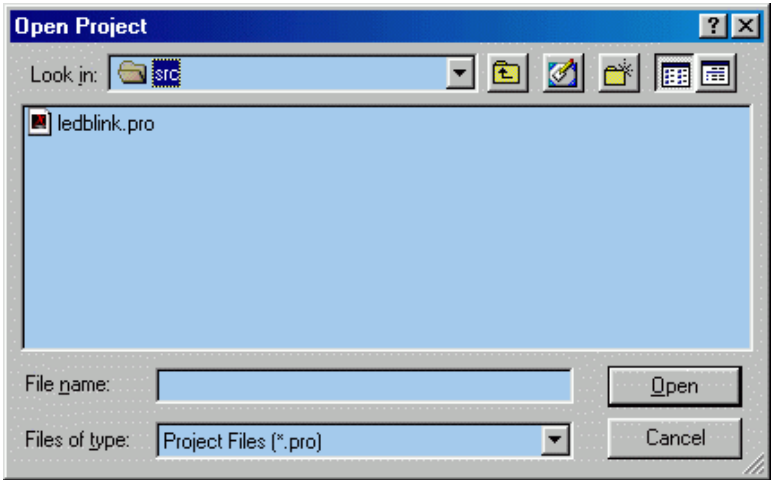


Figure 12. src Folder

7. Select the ledblink.pro file. The initial ZDS II program screen opens (Figure 13).

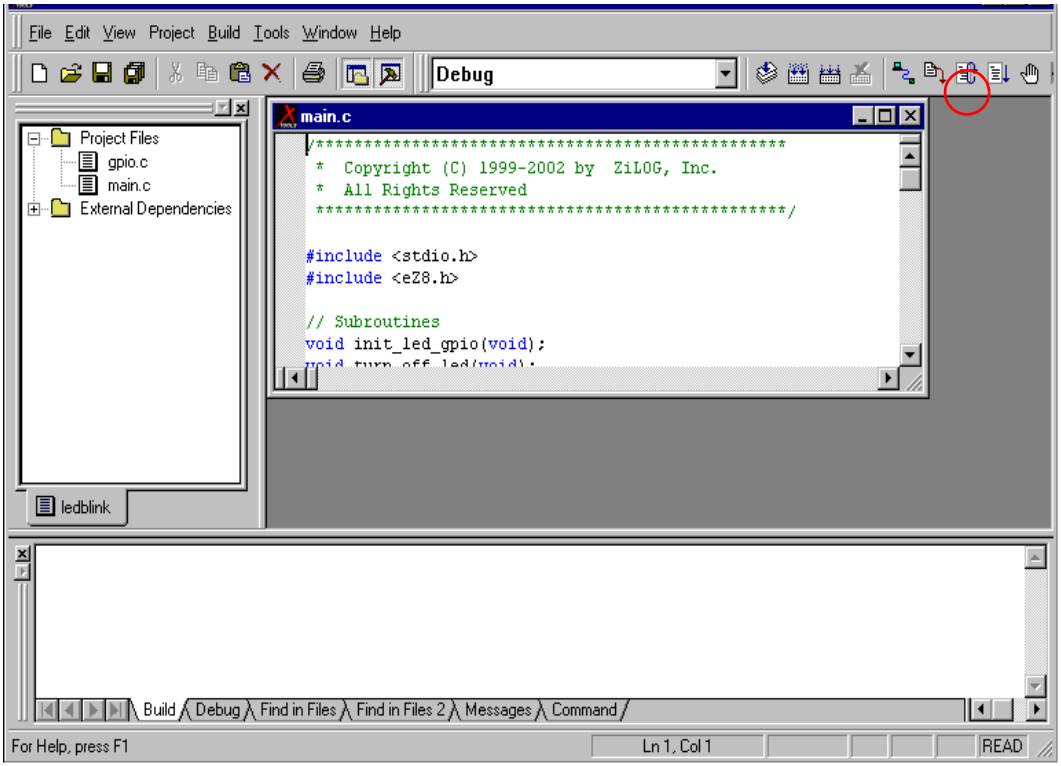


Figure 13. ZDS II Opening Screen

8. Click on the Rebuild All and then the Reset icon to connect and download the code to the Evaluation board.


Reset Icon

9. Click on Go to start the program.


Go Icon

For additional information, refer to Chapter 1, Getting Started, in the ZiLOG Developer Studio II, Z8 Encore® User Manual, supplied with the documentation on the CD-ROM or available for download at www.zilog.com.

Z8 Encore!®Evaluation Board

Introduction

Z8 Encore!® evaluation board (64KB version) is an evaluation and prototyping board for the Z8 Encore!® family of microcontrollers. The board provides customers with a tool to evaluate features of Z8 Encore!® family, and to start developing an application before building the hardware.

Features

- Z8 Encore!® MCU
- LED array with four 7 x 5 LED matrices
- Serial Communications Devices
  - I^2C configuration IC for Expansion Module
  - SPI Interface with temperature sensor
- IrDA transceiver
- Power and communication interfaces
  - 9VDC power supply
  - Two RS-232 connectors
  - One RS-485 connector with two ports
- Expansion Module interface
- Embedded modem socket with U.S. phone line interface (modem is not included in the kit)
- Three pushbuttons

Block Diagram

The board consists of six major blocks:

1. Z8 Encore!® MCU
2. Serial communication devices (SPI and I^2C)
3. Power and communication interfaces
4. LED array
5. Expansion Module interfaces
6. IrDA transceiver
7. ZiLOG Debug Interface (DBG)

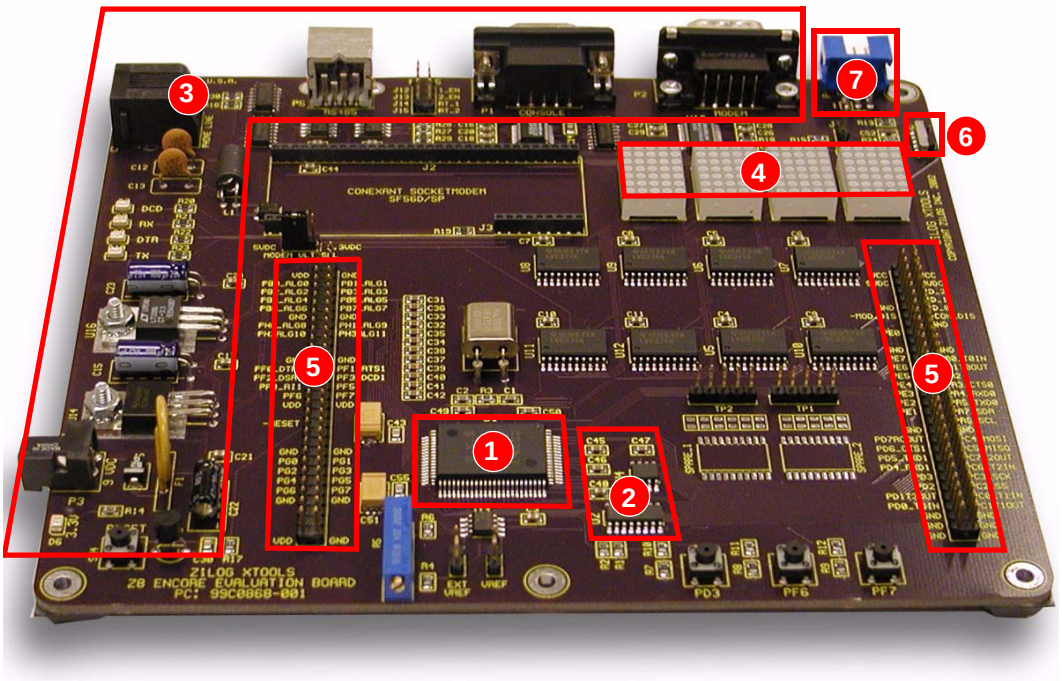


Figure 10. Major Z8 Encore!® Evaluation Board Blocks

Figure 11 illustrates the Z8 Encore!® evaluation board block diagram.

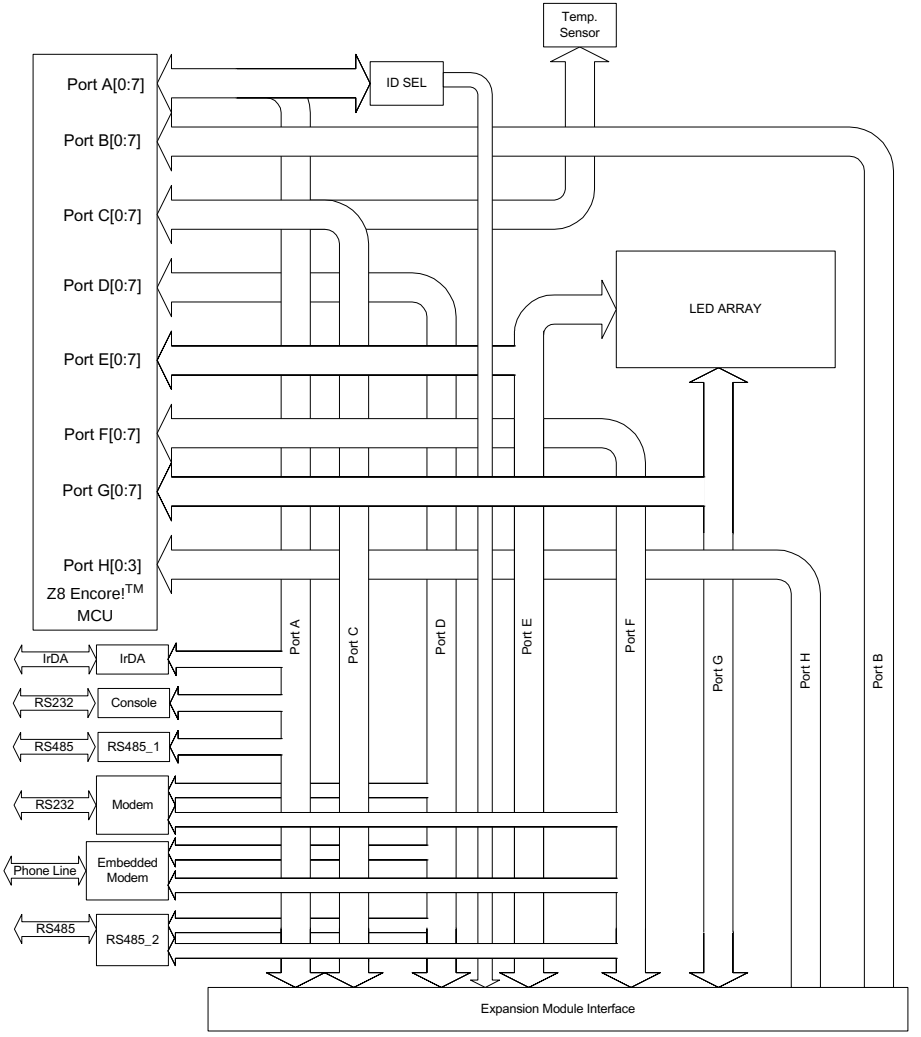


Figure 11. Z8 Encore!® Evaluation Board Block Diagram

MCU

The Z8 Encore!® MCU family of products are the first in a line of ZiLOG microcontroller products based upon the new 8-bit eZ8 core CPU. The Flash in-circuit programming capability allows for faster development time and program changes in the field. The new eZ8 core CPU is upward compatible with existing Z8® instructions. The rich peripheral set of the Z8 Encore!® 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 presents all the features of the Z8 Encore!®. The main features of the Z8 Encore!® are:

- eZ8 core CPU
- 64KB Flash memory with in-circuit programming capability
- 4KB register RAM
- 12-channel, 10-bit analog-to-digital converter (ADC)
- Two full-duplex UARTs
- I^2C interface (Master Mode only)
- Serial Peripheral Interface (SPI)
- Two Infrared Data Association (IrDA)-compliant infrared encoder/ decoders
- Three to four 16-bit timers with capture, compare, and PWM capability. 40-pin and 44-pin packages feature only 3 timers. The fourth timer is available only on the 64-, 68- and 80-pin packages.
- Watch-Dog Timer (WDT) with internal RC oscillator
- 3-channel DMA
- Up to 60 I/O pins
- 24 interrupts with configurable priority

- On-Chip Debugger
- Voltage Brown-out Protection (VBO)
- Power-On Reset (POR)
- 3.0-3.6V operating voltage with 5V-tolerant inputs
- 0° to +70°C operating temperature

For further information on the Z8 Encore!® family of devices, consult the product specification, P/N PS0176.

LED Array

The LED array display user information. There are four 7x5 LED matrixes. To light up an LED dot the appropriate Anode bit must be 1, and the correlated Cathode must be 0. All Anodes are addressed by Port G, and Cathodes are addressed by Port E. Every LED Matrix is addressed by separate pair of registers. Each of the register pairs is addressed by a bit of Port E or Port G. Tables 1 through 4 describe how to address each Anode and Cathode of D1 through D4.

Table 1. LED Anode Assignments

Function \ Port G Bit #	**6**	**5**	**4**	**3**	**2**	**1**	**0**
Anode Row 0							X
Anode Row 1						X	
Anode Row 2					X		
Anode Row 3				X			
Anode Row 4			X				
Anode Row 5		X					
Anode Row 6	X						
Note: Row 0 = Topmost Row							

Table 2. LED Cathode/Modem/Trigger

Function \ Port E Bit #	4	3	2	1	0
Cathode Column 0					X
Cathode Column 1				X	
Cathode Column 2			X		
Cathode Column 3		X			
Cathode Column 4	X				
Note: Column 0 = Leftmost Column					

Table 3. LED Addressing

Function \ Port, Bit #	PE[5]	PE[6]	PE[7]	PG[7]
D3	X			
D4		X		
D1			X	
D2				X

Serial Communications Devices

I²C Interface

The Z8 Encore!®is compatible with I²C protocol (in this case the PCA8550). The I²C controller consists of two bidirectional bus lines, a serial data (SDA) line and a serial clock (SCL) line.

The I²C Controller operates in Master mode to transmit and receive data.

Having a PCA8550 on board enables configuration of the Expansion Module. The PCA8550 is a 4-bit multiplexer that selects four bits of data either from a non-volatile register or from the input pins. In this case four input pins are left unconnected and only a non-volatile register is selected as a source of data. Only three bits are used. Currently this chip is not used by the software provided with the board, so a user is free to use it to their advantage. The configuration register (Table 4) is available at the

address 0x9C for Write operation and 0x9D for Read operation on the PCA8550 device. Please refer to the PCA8550 Product Specification (www.semiconductors.philips.com) for more details on programming this device.

Table 4. I²C Address for Configuration Register on the PCA8550 (U2)

Device \ Bit #	7	6	5	4	3	2	1	0
Value	1	0	0	1	1	1	0	R/W

SPI Interface

The serial peripheral interface (SPI) allows the Z8 Encore!® to exchange data between other peripheral devices such as EEPROMs, A/D converters and ISDN devices. The SPI is a full-duplex, synchronous, character-oriented channel that supports a four-wire interface.

To work with SPI interface for temperature/sensor types of applications, DS1722 Digital Thermometer was incorporated into the board. The serial mode is SPI. Refer to the DS1722 Product Specification for more details on programming the device.

IrDA Transceiver

The Z8 Encore!® contains two fully-functional, high-performance UARTs with Infrared Encoder/Decoders (Endec). The Infrared Endec is integrated with an on-chip UART to allow easy communication between the Z8 Encore!® 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

- A 9VDC power supply powers the board

- Two RS-232 DB9 connectors and an RS-485 connector with two ports
- A ZiLOG IrDA transceiver is integrated onto the Z8 Encore!® evaluation board

Smart Cable

The Z8 Encore!® Smart Cable enables communication with the Host computer. The Z8 Encore!® Smart Cable converts a one-wire interface into a two-wire (TxD and RxD RS-232-like interface with RS-232 levels.

Figure to be added at a later revision

Figure 12. Smart Cable

Expansion Module Interface

The Expansion Module Interface allows addition of any plug-in modules. The Expansion Module Interface brings out the signals from the Z8 Encore!® device for debug and testing.

Two 60-pin male headers, J6 and J8, implement the Expansion Module Interface. Tables 5 and 6 list the signals and their direction, where applicable.

Table 5. Header J6

Pin #	Signal Name	Function	Direction	Comments
1		VCC		
2		VCC		
3		9VDC		
4		9VDC		
5	SCL	I^2C Clock	OUT	
6	ID2	Evaluation Board ID	OUT	
7	SDA	I^2C Data	IN/OUT	
8	ID1	Evaluation Board ID	OUT	
9		GND		
10	ID0	Evaluation Board ID	OUT	
11	-MOD_DIS	Modem Disable	OUT	If a shunt is installed the Modem Function on the evaluation board is disabled
12	-CON_DIS	Console Disable	OUT	If a shunt is installed the Console Function on the evaluation board is disabled
13	-MWAIT		IN	Reserved (see note)
14	GND			
15	PE0	Port E, Bit 0	IN/OUT	
16				
17	-CS3			Reserved (see note)
18				
19	GND			
20	GND			
21	PE7	Port E, bit 7	IN/OUT	
22	PA0	Port A, bit 0	IN/OUT	T0IN

Note: Do not use pins marked Reserved when designing Expansion Modules.
All of the signals are driven directly by the MCU.

Table 5. Header J6 (Continued)

Pin #	Signal Name	Function	Direction	Comments
23	PE6	Port E, bit 6	IN/OUT	
24	PA1	Port A, bit1	IN/OUT	T0OUT
25	PE5	Port E, bit 5	IN/OUT	
26	PA2	Port A, bit 2	IN/OUT	
27	PE4	Port E, bit 4	IN/OUT	
28	PA3	Port A, bit 3	IN/OUT	CTS0
29	PE3	Port E, bit 3	IN/OUT	
30	PA4	Port A, bit 4	IN/OUT	RXD0
31	PE2	Port E, bit 2	IN/OUT	
32	PA5	Port A, bit 5	IN/OUT	TXD0
33	PE1	Port E, bit 1	IN/OUT	
34	PA7	Port A, bit 7	IN/OUT	SDA
35	RESERVED			
36	PA6	Port A, bit 6	IN/OUT	SCL
37		GND		
38		GND		
39	PD7	Port D, bit 7	IN/OUT	RCOUT
40	PC4	Port C, bit 4	IN/OUT	MOSI
41	PD6	Port D, bit 6	IN/OUT	CTS1
42	PC3	Port C, bit 3	IN/OUT	MISO
43	PD5	Port D, bit 5	IN/OUT	TXD1
44	PC7	Port C, bit 7	IN/OUT	T2OUT
45	PD4	Port D, bit 4	IN/OUT	RXD1
46	PC6	Port C, bit 6	IN/OUT	T2IN
47	PD3	Port D, bit 3	IN/OUT	
48	PC3	Port C, bit 3	IN/OUT	SCK

Note: Do not use pins marked Reserved when designing Expansion Modules.
All of the signals are driven directly by the MCU.

Table 5. Header J6 (Continued)

Pin #	Signal Name	Function	Direction	Comments
49	PD2	Port D, bit 2	IN/OUT	
50	PC2	Port C, bit 2	IN/OUT	SS
51	PD1	Port D, bit 1	IN/OUT	T3OUT
52	PC0	Port C, bit 0	IN/OUT	T1IN
53	PD0	Port D, bit 0	IN/OUT	T3IN
54	PC1	Port C, bit 1	IN/OUT	T1OUT
55		GND		
56		GND		
57		GND		
58		GND		
59		GND		
60		GND		

Note: Do not use pins marked Reserved when designing Expansion Modules.
All of the signals are driven directly by the MCU.

Table 6. Header J8

Pin #	Signal Name	Function	Direction	Comments
1		VDD		
2		GND		
3	PB0	Port B, bit 0	IN	ALG0 Analog input
4	PB1	Port B, bit 1	IN	ALG1 Analog input
5	PB2	Port B, bit 2	IN	ALG2 Analog input
6	PB3	Port B, bit 3	IN	ALG3 Analog input
7	PB4	Port B, bit 4	IN	ALG4 Analog input
8	PB5	Port B, bit 5	IN	ALG5 Analog input

Note: Do not use pins marked Reserved when designing Expansion Modules.
All of the signals are driven directly by the MCU.

Table 6. Header J8 (Continued)

Pin #	Signal Name	Function	Direction	Comments
9	PB6	Port B, bit 6	IN	ALG6 Analog input
10	PB7	Port B, bit 7	IN	ALG7 Analog input
11		GND		
12		GND		
13	PH0	Port H, bit 0	IN	ALG8 Analog input
14	PH1	Port H, bit 1	IN	ALG9 Analog input
15	PH2	Port H, bit 2	IN	ALG10 Analog input
16	PH3	Port H, bit 3	IN	ALG11 Analog input
17				Reserved (see note)
18				Reserved (see note)
19				Reserved (see note)
20				Reserved (see note)
21		GND		
22		GND		
23	PF0	Port F, bit 0	IN/OUT	DTR1
24	PF1	Port F, bit 1	IN/OUT	RTS1
25	PF2	Port F, bit 2	IN/OUT	DSR1
26	PF3	Port F, bit 3	IN/OUT	DCD1
27	PF4	Port F, bit 4	IN/OUT	RI1
28	PF5	Port F, bit 5	IN/OUT	
29	PF6	Port F, bit 6	IN/OUT	
30	PF7	Port F, bit 7	IN/OUT	
31		VDD		
32		VDD		
33	-RD	Read		Reserved (see note)
34	-WR	Write		Reserved (see note)

Note: Do not use pins marked Reserved when designing Expansion Modules.
All of the signals are driven directly by the MCU.

Table 6. Header J8 (Continued)

Pin #	Signal Name	Function	Direction	Comments
35	-RESET	Pushbutton reset	OUT	
36	INSTRD			Reserved (see note)
37	-BUSACK			Reserved (see note)
38	-BUSREQ			Reserved (see note)
39	-NMI			Reserved (see note)
40	PHI			Reserved (see note)
41		GND		
42		GND		
43	PG0	Port G, bit 0	IN/OUT	
44	PG1	Port G, bit 1	IN/OUT	
45	PG2	Port G, bit 2	IN/OUT	
46	PG3	Port G, bit 3	IN/OUT	
47	PG4	Port G, bit 4	IN/OUT	
48	PG5	Port G, bit 5	IN/OUT	
49	PG6	Port G, bit 6	IN/OUT	
50	PG7	Port G, bit 7	IN/OUT	
51		GND		
52		GND		
53	-CS0			Reserved (see note)
54	-CS1			Reserved (see note)
55	-CS2			Reserved (see note)
56	-CSx			Reserved (see note)

Note: Do not use pins marked Reserved when designing Expansion Modules.
All of the signals are driven directly by the MCU.

Table 6. Header J8 (Continued)

Pin #	Signal Name	Function	Direction	Comments
57	-MEMRQ			Reserved (see note)
58	-IORQ			Reserved (see note)
59		VDD		
60		GND		

Note: Do not use pins marked Reserved when designing Expansion Modules. All of the signals are driven directly by the MCU.

Configuration Headers/Jumpers

Configuration headers/jumpers help to configure the board. Table 7 provides the function of each header, and related headers, registers or devices.

Note: The default settings for all jumpers is OUT.

Table 7. Configuration Headers and Jumpers

Header	Function	Related Headers, Registers or Devices
J1	RJ11	
J2	Modem connector	Header 32
J3	Modem connector	Header 9
J4	Modem connector	Header 2
J6.12 (-CON_DIS), J6.14 (GND)	Console Enable/Disable	J2
J6.11 (-MOD_DIS), J6.9 (GND)	Modem Enable/Disable	
J7	External Vref	Internal Vref Control
J8	Expansion Module Header	
J9	Vref test point	R5
J10	IrDA Enable/Disable	J6.12 (-CON_DIS), J6.14, (GND)

Table 7. Configuration Headers and Jumpers

Header	Function	Related Headers, Registers or Devices
J11	SocketModem Power (3VDC/5VDC)	
J12	RS-485_1_EN	
J13	RS-485_2_EN	
J14	RT_1	
J15	RT_2	

Tables 8 through 13 provide jumper information concerning the shunt status, functions and devices affected of selected jumpers.

Table 8. J6.9–J6.11 -Modem Enable/Disable

Shunt Status	Function	Device Affected
IN	Modem connector (P2) is disabled	UART1 cannot communicate through P2. Ports D and F can be assigned to functions other than UART1.
OUT	Modem connector (P2) is enabled	If the embedded SocketModem is not in the socket, UART1 communicates through P2.

Table 9. J6.12–J6.14 -Console Enable/Disable

Shunt Status	Function	Device Affected
IN	Console connector (P1) is disabled	If J6.12–14 is IN and J10 is IN, Port A (3-5) is assigned to IrDA; if J10 is OUT Port A (3-5) is assigned to UART0.
OUT	Console connector (P1) is enabled	None

Table 10. J7 External Vref

Shunt Status	Function	Device or Register Affected
IN	External Vref is used for ADC	Internal Vref is disabled.
OUT	Internal Vref is used for ADC	Internal Vref is enabled.

Table 11. J9 Vref

	Function	Device or Register Affected
J9-1	Test point to external Vref	Vref
J9-2	GND	None

Table 12. J10 IrDA Enable/Disable

Shunt Status	Function	Device Affected
IN	IrDA enabled	Only the IrDA interface is operational.
OUT	IrDA disabled	UART0 communicates through RS-232. If J6 12-14 is IN Port A (3-5) can be assigned to other funtions (console connector P1 is disabled. If J6 12-14 is OUT console connector P1 is enabled (Port A (3-5) is assigned to UART0).

Note: If the IrDA board is installed the Console port is disabled.

Table 13. J11 SocketModem Power (3VDC/5VDC)

Shunt Position	Function	Device Affected
IN (pins 1-2)	5.0VDC is provided to power SocketModem	SocketModem
OUT (pins 2-3)	3.3VDC is provided to power SocketModem	SocketModem

Table 14. J12–RS-485_1_Enable First Interface

Shunt Position	Function	Device Affected
IN	RS-485 disabled	none
OUT	Enables RS-485 first interface	Console and IrDA

Table 15. J13–RS-485_1_Enable Second Interface

Shunt Position	Function	Device Affected
IN	RS-485 disabled	none
OUT	Enables RS-485 second interface	SocketModem

Table 16. J14–RT_1,Termination Resistors Enable, RS-485 First Interface

Shunt Position	Function	Device Affected
IN	First RS-485 interface termination resistors disabled	none
OUT	Enables first RS-485 interface termination resistors	none

Table 17. J15–RT_2,Termination Resistors Enable, RS-485 Second Interface

Shunt Position	Function	Device Affected
IN	Second RS-485 interface termination resistors disabled	none
OUT	Enables second RS-485 interface termination resistors	none

Embedded Modem

Figure 13 identifies the embedded modem location.

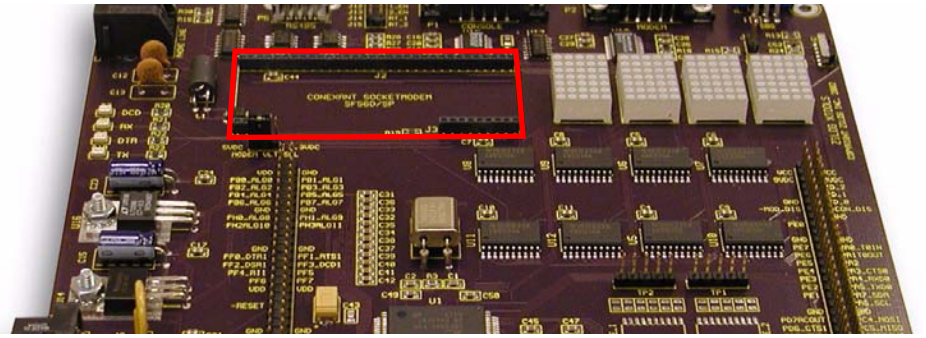


Figure 13. Embedded Modem Placement

The evaluation board provides for an embedded modem, the SF56D/SP SocketModem. The SocketModem is not part of the kit. Table 18 lists ordering information for the modem. The interface communicates with the modem serially. LEDs D7-D10 provide information about the status of the modem's interface lines. The phone line connection is for the U.S. only. To connect to a modem outside of the U.S., modifications must be made to the board. The necessary data is found in the SocketModem Data Sheet on www.zilog.com.

Table 18. SocketModem Ordering Information

Sales Order Number	Part Number	Configuration
SC56H1	SC43-E310-001	V.90/56 kbps, serial interface, +5V operation
SC56H1_L	SC43-E320-001	V.90/56 kbps, serial interface, +3.3V operation
SC336H1	SC34-E310-001	V.34/33.6 kbps, serial interface, +5V operation
SC336H1_L	SC34-E310-001	V.34/33.6 kbps, serial interface, +5V operation
SC144H1	SC14-E310-001	V.32/14.4 kbps, serial interface, +5V operation
SC144H1_L	SC14-E310-001	V.32/14.4 kbps, serial interface, +5V operation

Pushbuttons

The Z8 Encore!® evaluation board contains three user-configurable push-buttons (see Figure 14).

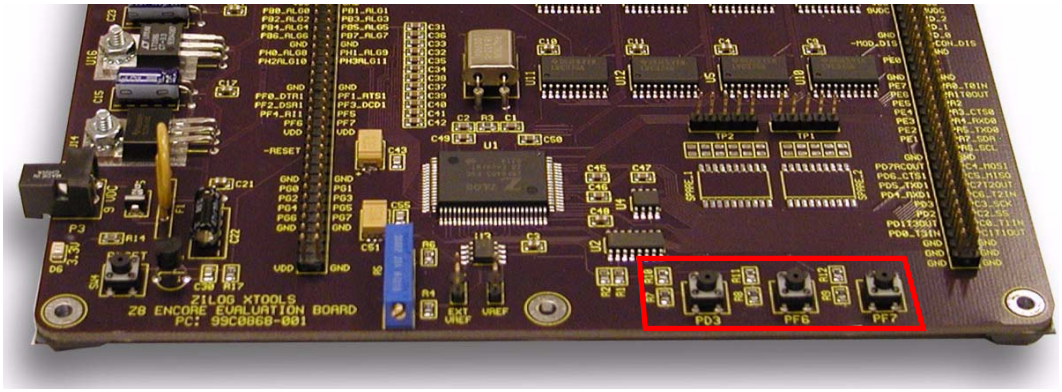
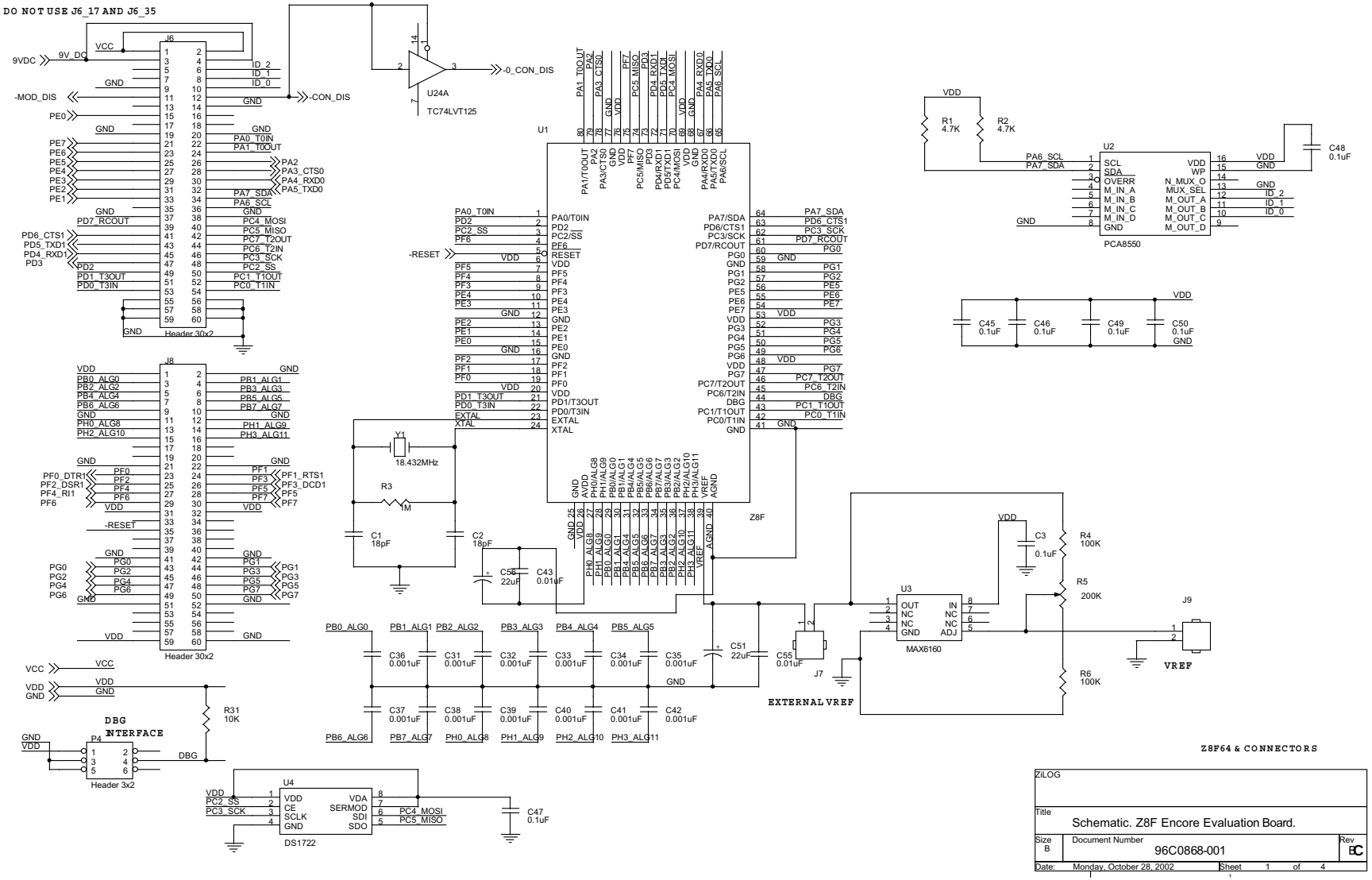


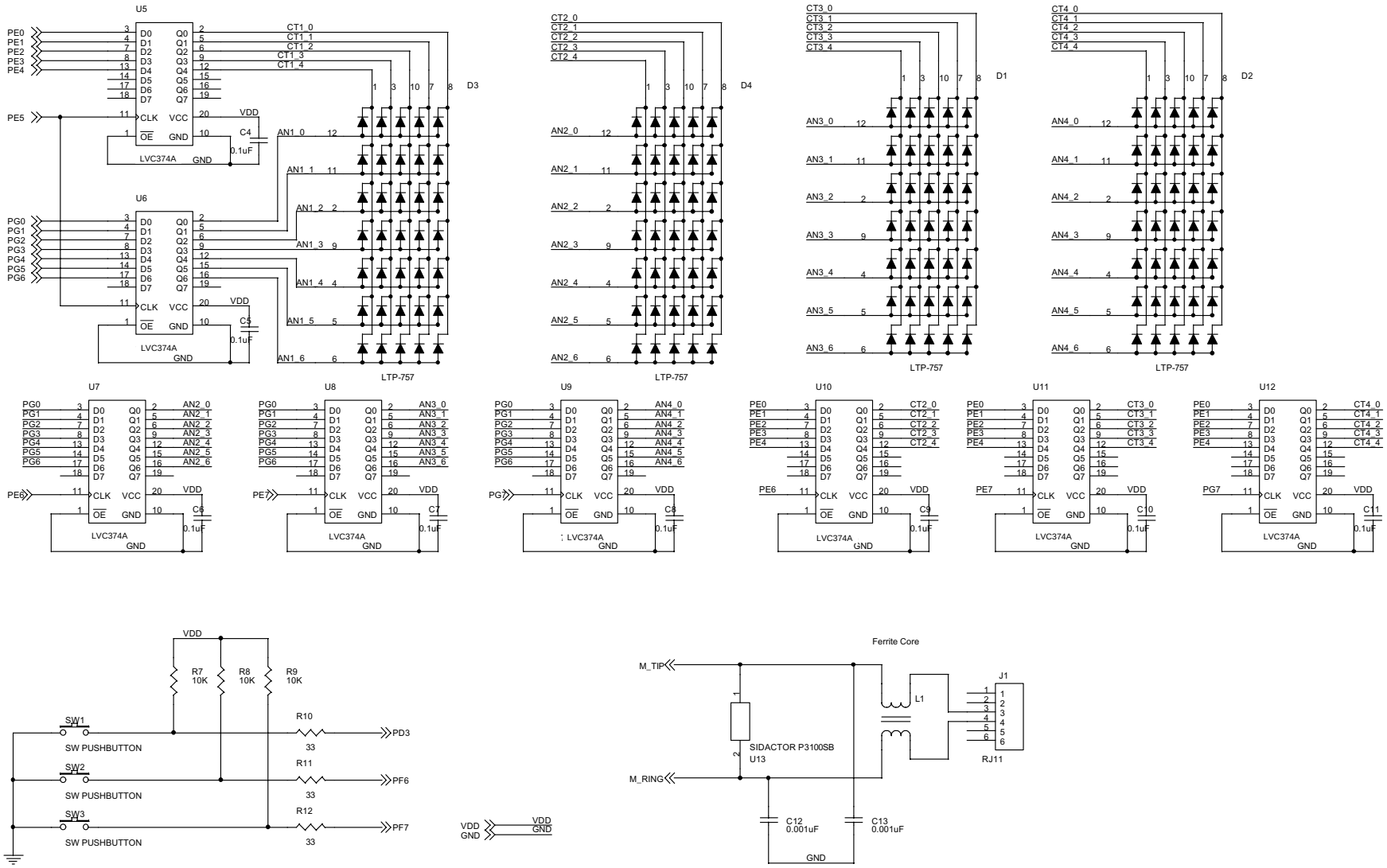
Figure 14. User-Configurable Pushbuttons

Schematics

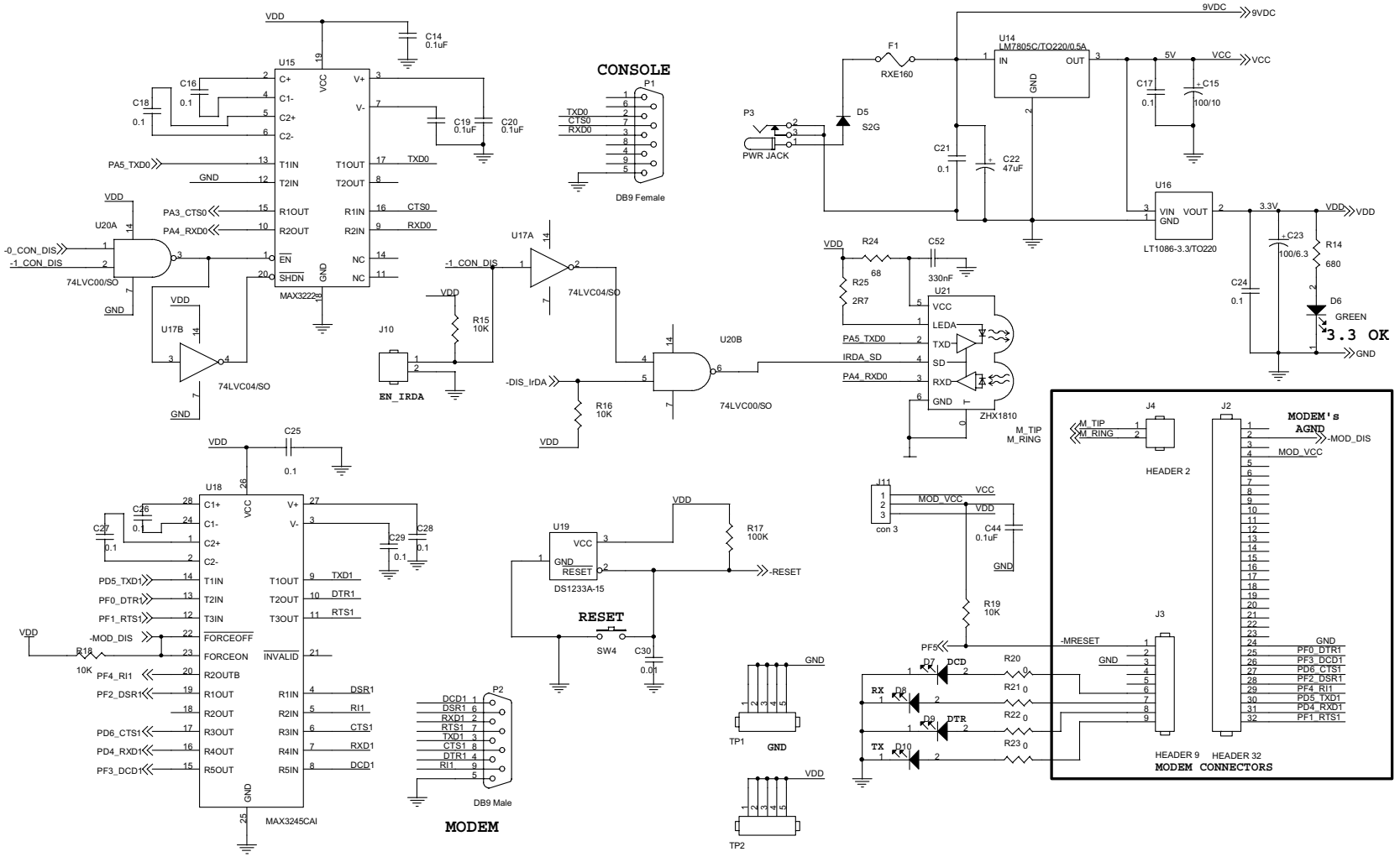
This section includes schematics for the Z8 Encore!™ Target Module and the Z8 Encore!™ Evaluation Board.



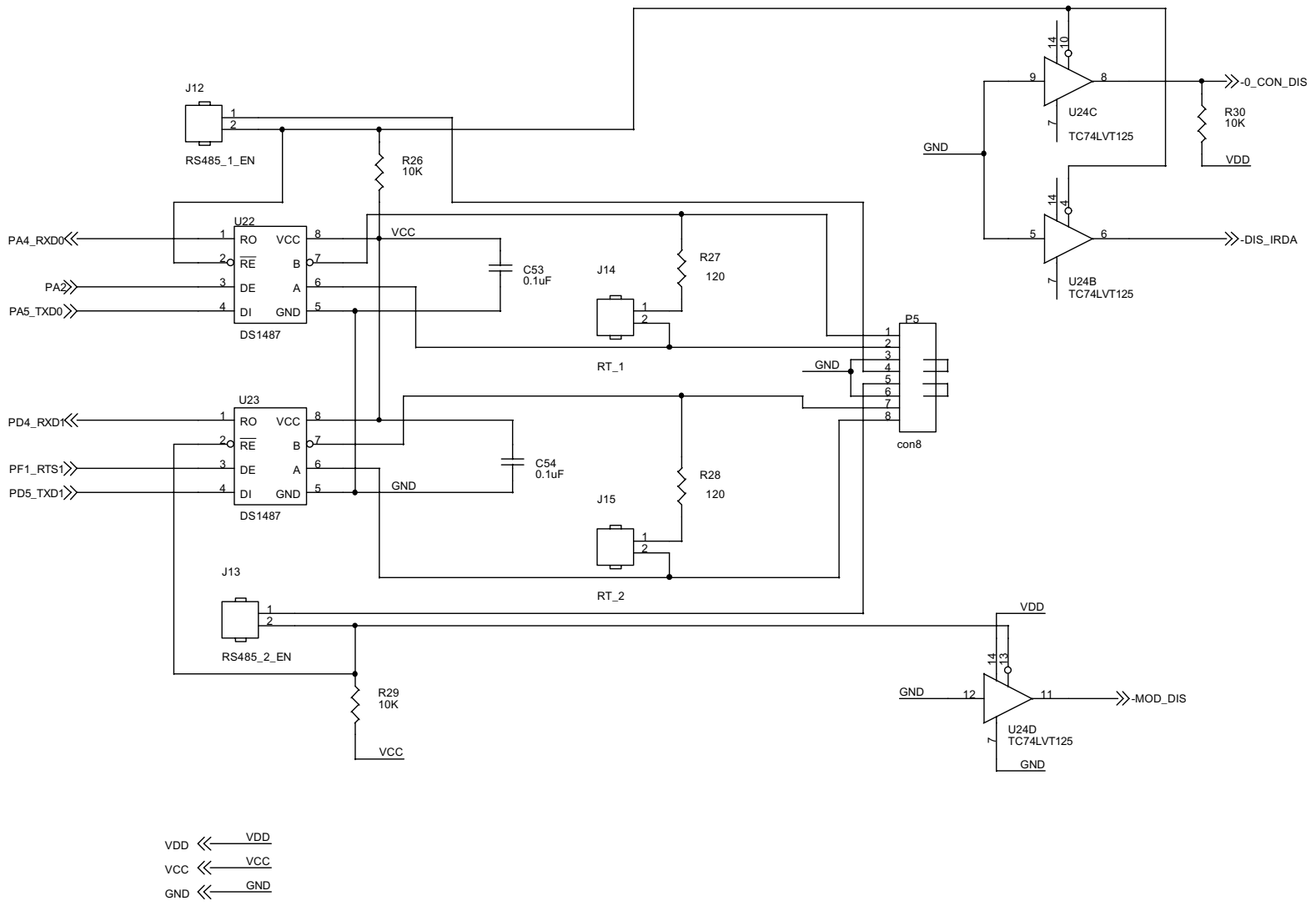
Schematic, Z8 Encore! ™ Evaluation Board, Page 1 of 4 (96C0868-001 Rev. C)



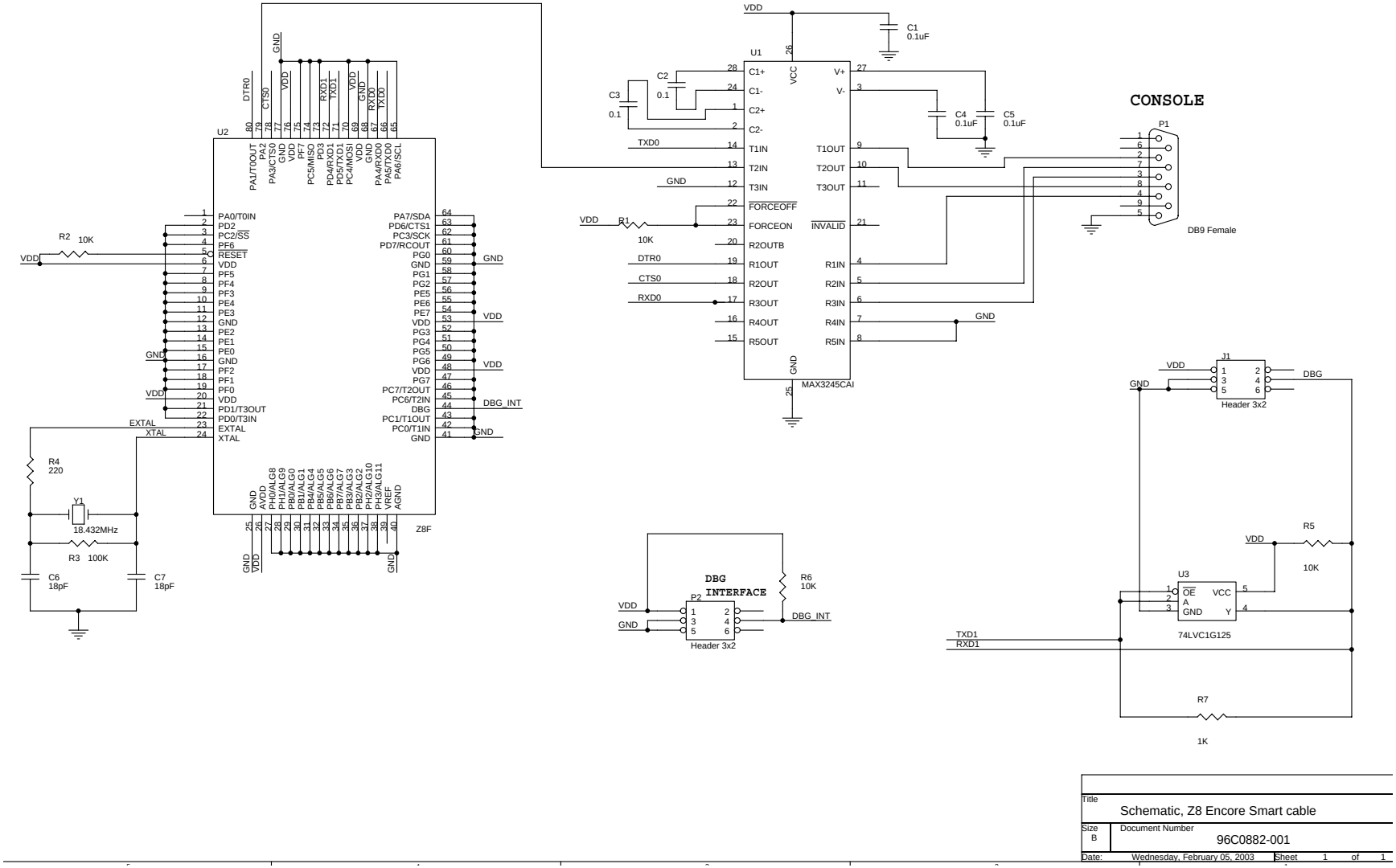
Schematic, Z8 Encore! ™ Evaluation Board, Page 2 of 4 (96C0868-001 Rev. C)



Schematic, Z8 Encore! ™ Evaluation Board, Page 3 of 4 (96C0868-001 Rev. C)



Schematic, Z8 Encore! ™ Evaluation Board Page 4 of 4 (96C0868-001 Rev. C)



Schematic, Z8 Encore! ™ Smart Cable

Index

S

U

V

Z