
Z8 Encore! XP[®] F042A 8-Pin Development Kit

Quick Start Guide

QS005505-0508

Introduction

This Quick Start Guide describes how to set up Zilog's Z8 Encore! XP[®] 8-Pin Development Kit and start using it to build designs and applications.

Kit Contents

Hardware

Hardware requirements include:

- Z8 Encore! XP F042A Series 8-Pin Development Board, Z8F04A08100KITG
- USB Smart Cable for connecting the PC to Z8 Encore! XP F042A Series Development Board
- 5 V DC Universal Power Supply

Software (on CD-ROM)

Software requirements include:

- Zilog Developer Studio II (ZDS II)—Z8 Encore![®] Integrated Development Environment (IDE)
- Full ANSI C-Compiler included
- Sample Code
- Acrobat Reader
- Document Browser

Documentation

The Z8 Encore! XP Technical Documentation (on CD-ROM) include:

- Development Kit User Manual
- ZDS II–IDE User Manual (UM0130)
- eZ8 CPU User Manual (UM0128)
- Product Specification
- Product Brief

– Product Line Card

Requirements

Table 1 lists the system requirements for running ZDS II.

Table 1. ZDS II System Requirements

Recommended Configuration	Minimum Configuration
<ul style="list-style-type: none">• PC running MS Windows XP Professional, SP1• Pentium III/500 MHz or higher processor• 128 MB RAM• 110 MB hard disk space• Super VGA video adapter• CD-ROM drive• Ethernet port• One or more RS-232 communications ports• USB High-Speed Port	<ul style="list-style-type: none">• PC running MS Windows 98SE/Win2000–SP3/WinXP Professional–SP1• Pentium II/233 MHz processor• 96 MB RAM• 25 MB hard disk space (documentation not installed)• Super VGA video adapter• CD-ROM drive• Ethernet port• One or more RS-232 communications ports• USB High-Speed Port

Configuring the 5 V DC Universal Power Supply

The universal power supply kit features several different plug adapters in one box and the power supply itself in another. The power supply ships with a slide-out plate that must be removed to insert the location-specific plug adapter.

1. Remove the slide-out plate.
2. Select the AC plug adapter appropriate for your locale and insert it into the slot that remains after removing the slide-out plate.
3. Slide the new plug adapter into the slot until it snaps into place.

You can leave the adapter slot cover in place and plug in a standard computer equipment AC power cord (purchased separately) between the AC cord receptacle on the end of the power supply and an electrical outlet.

Setting Up the Development Board

The USB Smart Cable connects the target Z8 Encore! XP development board to a high-speed or full-speed USB port on your ZDS II host system.



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

Figure 1 displays a simplified development board.

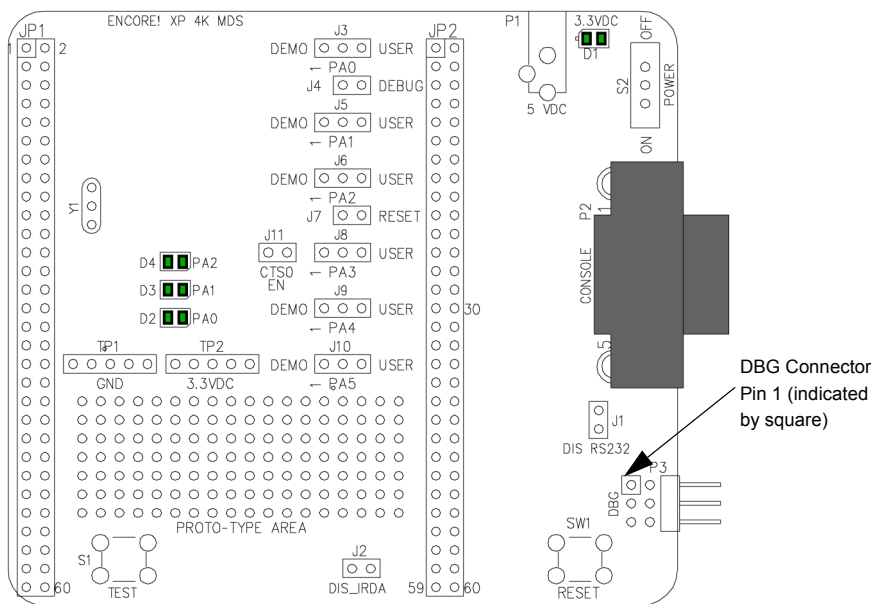


Figure 1. Z8 Encore! XP 8-Pin Development Board

Follow the steps below to setup the development board:

1. For initial setup, ensure that jumper J2, DIS IRDA, is IN (shunt installed). For detailed jumper descriptions, refer to *Z8 Encore! XP® F042A Series 8-Pin Development Kit User Manual (UM0187)*.
2. Your development kit can run either in Standalone Demo mode or in DEBUG mode. Standalone Demo mode runs the preloaded code for demonstration purposes and is a simple way to verify that the board is working properly.

To run the kit in Standalone Demo mode, ensure that the jumpers are set as follows:

- J3 1-2
- J4 OUT
- J5 1-2
- J6 1-2
- J7 OUT
- J8 1-2
- J9 1-2
- J10 1-2
- J11 OUT

To run the kit in DEBUG mode, follow the steps as described in [Getting Started Using ZDS II](#) on page 8. For complete details on jumper settings for Z8 Encore! XP MCU 8-pin development kits, refer to *Z8F04A08100KITG Z8 Encore! XP® F042A 8-Pin Series User Manual (UM0187)*.

3. Install the included USB Smart Cable as described below for the appropriate operating system.



Caution: *Do not connect the power supply to the development board before connecting a USB Smart Cable to both the host PC and development board.*

Windows XP

Follow the steps below to install USB Smart Cable for Windows XP:

1. Connect the Zilog USB device to the Host PC. The **Found New Hardware** Wizard should activate automatically after connecting the Zilog USB device for the first time; select **No, not at this time** if asked to connect to Windows Update.

2. Select **Install from a list or specific location (Advanced)**; then click **Next**.

► **Note:** *If the Windows Logo testing dialog appears, select **Continue Anyway**.*

3. Select **Search for the best driver in these locations** and **Include this location in search**.

4. Browse to the following driver directory and click **Next**.

`<ZDS installation>\device drivers\USB`

5. Click **Next** after the appropriate driver is found.

6. Click **Finish** to complete the installation.

Windows 2000

Follow the steps below to install USB Smart Cable for Windows 2000:

1. Connect the Zilog USB device to the Host PC. The **Found New Hardware** Wizard should activate automatically after connecting the Zilog USB device for the first time.
2. Click **Next** in the **Found New Hardware** Wizard after it has been activated.
3. Select **Search for a suitable driver for my device (Recommended)** and click **Next**.
4. Select **Specify a location** and click **Next**.
5. Browse to the following driver directory and click **OK**.
`<ZDS installation>\device drivers\USB`
6. Click **Next** after the appropriate driver is found.
7. Click **Finish** to complete the installation.

Windows 98SE

Follow the steps below to install USB Smart Cable for Windows 98SE:

1. Connect the Zilog USB device to the Host PC. The **Add New Hardware** Wizard should activate automatically after connecting the Zilog USB device for the first time.
2. Click **Next** in the **Add New Hardware** Wizard after it has been activated.
3. Select **Search for the best driver for your device (Recommended)** and click **Next**.
4. Select **Specify a location:** and browse to the following driver directory, and click **Next**.
`<ZDS installation>\device drivers\USB`
5. Click **Next** after the appropriate driver is found.
6. Click **Finish** to complete the installation.

Connecting the USB Smart Cable to the Target Board

Attach one end of the six-conductor ribbon cable (included) to the USB Smart Cable six-pin DBG connector, as displayed in [Figure 2](#). Attach the free end of the ribbon cable to the DBG connector on the target board. Ensure that pin 1 on the ribbon cable (indicated by the

dark stripe) is aligned with pin 1 on the target connector (see [Figure 1](#) on page 3 for location of pin 1 on the Z8 Encore! XP® 8-pin development board).

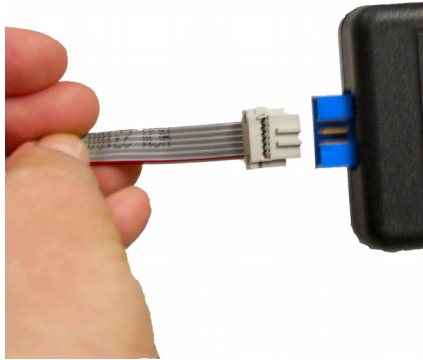


Figure 2. Connecting the Six-Conductor Ribbon Cable to the USB Smart Cable

Applying Power to the Development Board

Follow the steps below to apply power to the development board:

1. After installing the USB Smart Cable, connect the power supply to the development board at connector P1, then to an electrical outlet.
2. Slide Power switch S2 to the ON position.

The Green 3.3 V DC LED illuminates, indicating that power is being supplied to the board. LEDs D2, D3, and D4 should blink in sequence, indicating that your board is running the preloaded demonstration software. This means your board is functional and ready for prototyping.

Installing the ZDSII–Z8 Encore!® Software

Follow the steps below to install the software tools:

1. Load the ZDS II CD into the CD-ROM drive of the host PC. The CD launches *DemoShield* automatically and provides a menu to install the product and documentation.
2. Select **INSTALL PRODUCTS**, and then **INSTALL ZDS II** to display the Installation Wizard.
3. Click **Next** to continue with the installation. The License Agreement appears. Read it carefully as it represents your agreement for legal use of Zilog® software.
4. Select **Yes** to accept the agreement and proceed with the installation.
5. After selecting **Yes**, the Choose Destination 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 **Next**.

Unless you select a different location, the software is installed in:

C:\Program Files\ZiLOG\ZDSII_Z8Encore_<version_number>\

where <version_number> is the ZDS II version number (for example, 4.9.4).

6. The Select Program folder screen appears. Follow the directions on the screen and click **Next**. Unless you select a different location, the program is located in the **Start** menu under
Programs → ZiLOG ZDSII Z8 Encore! <version_number> → ZDSII Z8 Encore! <version_number>
7. After selecting **Next**, the **Register Your Software** screen appears, reminding you to register the development kit online. To register, visit <http://support.zilog.com/support/> and enter your Zilog® Support user name and password, or select **Create Account** if you do not have one. After logging in, select **Register New Products**.

Registered users can submit technical questions online and check status of their questions by logging in and clicking the **Support Requests** menu. They also receive free ZDS II updates, notification of new ZDS II versions, and can download other related free software online.

8. Select **Next** to continue. The Installation Wizard Complete page appears. You can now view the README file and/or launch ZDS II before finishing the installation.

Getting Started Using ZDS II

Follow the steps below to open and use the `ledBlink.zdsproj` sample project.

- **Note:** *These procedures reference the `ledBlink.zdsproj` file located in `c:\Program Files\ZiLOG\ZDSII_Z8Encore_<version_number>\Samples\Z8xxxx_ledBlink\src`, where `<version_number>` is the ZDS II version number and `Z8xxxx` is the CPU family. For example:*

For ZDS II v4.10.1 or lower:

`c:\Program Files\ZiLOG\ZDSII_Z8Encore_4.10.1\Samples\Z8F04XP_ledBlink\src.`

For ZDS II v4.11.0 and later:

`c:\Program Files\ZiLOG\ZDSII_Z8Encore_4.11.0\Samples\XP_F082A\XP_F042A_LedBlink\src.`

1. To run the sample project with the ZDS II debugger enabled, set the jumpers on the development board as follows:
 - J1 OUT
 - J2 IN
 - J3 OUT
 - J4 IN (must be installed to run in DEBUG mode)
 - J5 1-2
 - J6 1-2
 - J7 IN (must be installed to run in DEBUG mode)
 - J8 1-2
 - J9 1-2
 - J10 1-2
 - J11 OUT
2. Connect and apply power to the development board as described in [Setting Up the Development Board](#) on page 3.



Caution: *Do not apply power to the development board unless the USB Smart Cable is connected both to the host PC and to the development board's DBG port P3.*

3. Run the ZDS II software. By default, the ZDS II program is located in the **Start** menu under:

Programs → ZiLOG ZDSII Z8 Encore! <version_number> → ZDSII Z8 Encore! <version_number>

4. Select **Open Project** from the **File** menu. The **Open Project** dialog box appears.

► **Note:** *The sample used in the following steps is in the C programming language. An assembler version of the ledBlink sample is located in the Z8F04XP_8Pin_ledBlink_asm\src folder.*

5. Browse to the Samples folder for the ledBlink.zdsproj file, located by default in:
c:\Program Files\ZiLOG\ZDSII_Z8Encore_<version_number>\Samples\Z8F04XP_8Pin_ledBlink\src
6. Select the ledblink.zdsproj file and click **Open**. The initial ZDS II program screen appears (see [Figure 3](#) on page 10).

If you want to view the project source files, double-click the **Project Files** folder on left side of the IDE interface. Double-click an individual file to open that file in the ZDS II file editor.

► **Note:** *The following figures are for reference only. You may have a newer version of the software.*

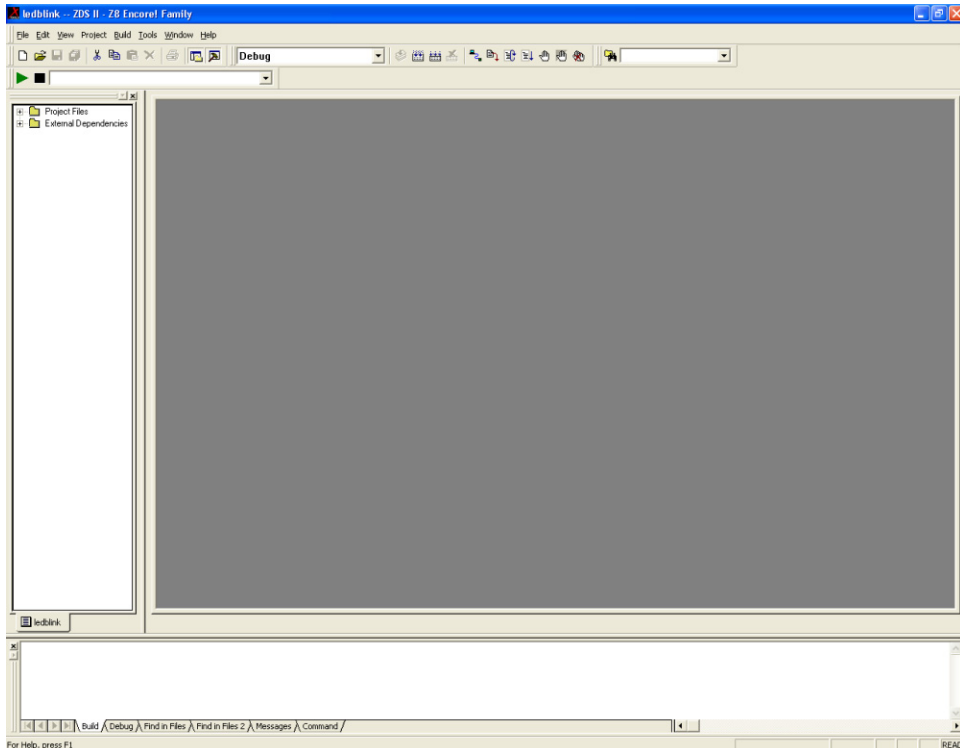





Figure 3. ZDS II Opening Screen

7. Select the correct debug tool using **Project** → **Settings** → **Debugger** → **Debug Tool**. For example, select **USBSmartCable** when using the USB Smart Cable. Click **F1** for additional information on how to setup the debugger.
8. Click **OK**.
9. Click the **Rebuild All** icon  to build the project. Wait for the build to complete as indicated by the 'Build Complete' confirmation in the status window at the bottom of the screen.
10. Click the **Reset** icon  to connect and download the code to the development board.

11. Click **Go** icon  to start the program. The screen changes as displayed in [Figure 4](#).

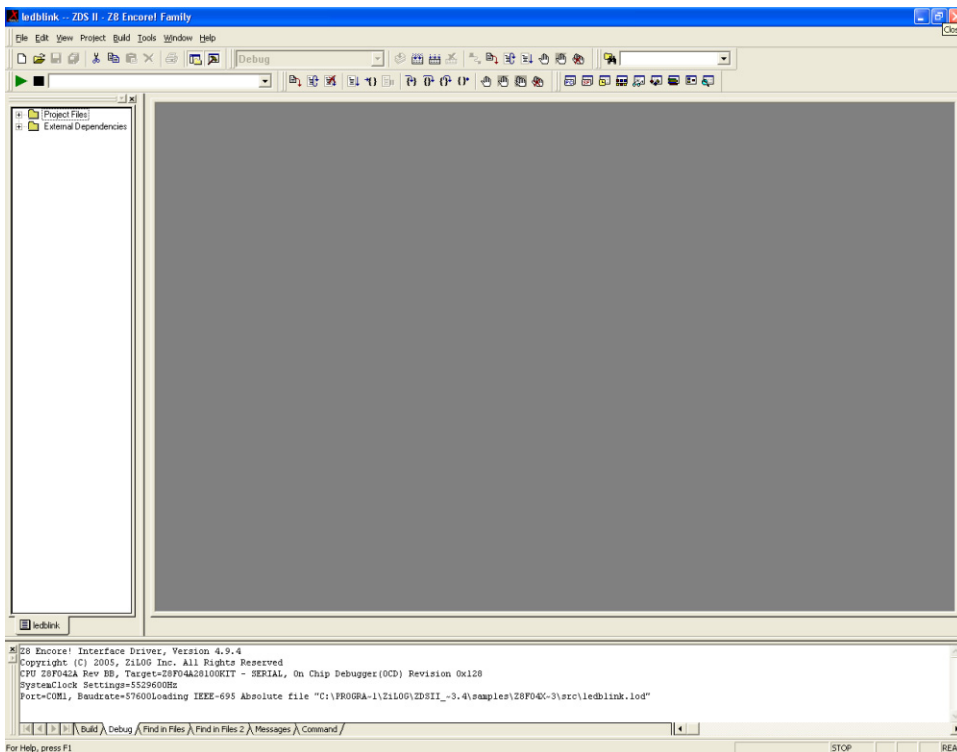


Figure 4. ZDS II Active Screen

12. Two LEDs on the development board begin blinking in sequence. If the LEDs do not blink, repeat [Step 3](#) on page 9.

► **Note:** LED D2/PA0 is shared with the DBG pin. Zilog[®] does not recommend having the LED connected while connecting to the target or while in debug mode (J3 should be OUT).



13. Press the **TEST** push button to change the sequence of the LEDs to blink in the opposite direction.


For more information about using ZDS II and building projects for your Z8 Encore! XP development kit, refer to *Zilog Developer Studio II–Z8 Encore!® User Manual (UM0130)*.

► **Note:** *You can also use the Z8 Encore! XP F042A series 8-pin development kit and its sample project to evaluate the development environment for the Z8 Encore! XP F08xA and F0823 Series 8-pin MCUs. The Z8 Encore! XP F042A series 8-pin development kit board may also be used with a ZDS project that targets the Z8 Encore! XP F08xA or F0823 8-pin devices. However, the device feature limitations, such as reduced program space, will exist. The Z8 Encore! XP F042A 8-pin device on the development board may also be replaced with a Z8 Encore! XP F08xA or F0823 8-pin device for a more detailed chip evaluation.*

Troubleshooting Tips

If you experience trouble running the demo program with the Z8 Encore! XP development board, check the following before contacting Zilog Technical Support for assistance:

- Verify that you are using ZDS II version 4.9.2 or later.
- Ensure that you are using the unmodified sample project code as described in [Getting Started Using ZDS II](#) on page 8.
- Verify that you have properly connected the USB Smart Cable to the host PC and the 8-pin development board as described in [Setting Up the Development Board](#) on page 3. Ensure that pin 1 of the cable is properly aligned with DBG connector pin 1 of the development board.
- Apply power to the development board using S2 slide switch. The green 3.3 V DC LED should be ON. If it is not illuminated, verify if power is properly connected to the board as described in [Configuring the 5 V DC Universal Power Supply](#) on page 2.
- In ZDS II, verify select the **Project** → **Settings** → **Debugger** → **Communication** menu item and verify that the serial number for the USB Smart Cable interface is present and selected. If the serial number is missing, reinstall the USB Smart Cable driver software.
- In ZDS II, verify that Z8F04A08100KITG-USB is selected as the target.
- In ZDS II, click the **Rebuild All**  button. Verify that the project rebuilds with no errors.
- Verify that the development board is not currently running any code—no LEDs should be blinking.
- In ZDS II, click the **IDE Reset**  button. ZDS II will connect to the development board and download code to it.

- Open the Windows Hyperterminal application (located in your **Accessories** program group) and connect a DB9-to-DB9 cable between your host PC and console port P2 of the development board. Set the communication settings to 57600 8 bits, no parity, one stop bit. This is noted on `main.c` file.
- Click the **Go**  button. The Red and Yellow LEDs should blink in sequence. The hyperterminal should display the 'Led Lights...' message.

If the demo code still does not run, contact Zilog[®] Technical Support at www.zilog.com.



Warning: DO NOT USE IN LIFE SUPPORT

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