Z8 Encore! XP/Z8 Encore! Development Kits

Quick Start Guide

Introduction

This Quick Start Guide describes how to set up Zilog's Z8 Encore! XP/Z8 Encore! Development Kits and start using them to build designs and applications that will employ 20- and/or 28-pin Z8 Encore! or Z8 Encore! XP MCUs.

Kit Contents

Hardware

The hardware requirements include:

- One of the following development boards:
  - Z8 Encore! XP F082A Series Flash Microcontrollers Development Board
  - Z8 Encore! XP F042A Series Flash Microcontrollers Development Board
  - Z8 Encore! XP F0822 Series Flash Microcontrollers Development Board
  - Z8 Encore! XP F1680 Flash Series Development Board
  - Z8 Encore! F083A Series Flash Microcontrollers Development Board
- Smart Cable for connecting the PC to Z8 Encore! XP Development Board
- 5 V DC Universal power supply

Software (on CD-ROM)

The software requirements include:

- Zilog Developer Studio II (ZDS II) – Z8 Encore! Integrated Development Environment with ANSI C-Compiler
- Sample Code
- Acrobat Reader
- Document browser

Documentation

The related Z8 Encore! XP/Z8 Encore! technical documentation (on CD-ROM) include:

- Development Kit User Manual

- ZDS II – User Manual
- eZ8 CPU User Manual
- Product Specification
- Product Brief

System Requirements

Table 1 lists the system requirements for running ZDS II.

Table 1. Zilog Developer Studio II System Requirements

Recommended Configuration	Minimum Configuration
• Windows XP Professional SP3 or later	• Windows XP Professional
• Pentium IV 2.2GHz processor or Higher	• Pentium IV 1.2GHZ processor
• 1024MB RAM or Higher	• 512 MB RAM
• 135 MB hard disk space (includes Application and Documentation)	• 50 MB hard disk space (only includes Application)
• Super VGA Video Adapter	• Super VGA Video Adapter
• CD-ROM for installation	• CD-ROM for installation
• USB High-Speed port (when using USB Smart Cable)	• USB Full-Speed port (when using USB Smart Cable)
• Ethernet port (when using Ethernet Smart Cable)	• RS-232 communication port with hardware flow control
• RS232 communication port with hardware flow control	• Internet browser (Internet Explorer or Netscape)
• Internet browser (Internet Explorer or Netscape)	

Configuring the Power Supply

The universal power supply kit features four 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.

If a location-specific adapter plug is required, observe the following steps to install it.

1. Remove the slide-out plate.

2. Select the appropriate AC plug adapter 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.

> **Note:** Previous versions of the development kit used the Serial Smart Cable. New kits as of June 2006 will use the USB Smart Cable. Refer to the following instructions for specifics on installing the cable available with your kit.

Installation Overview

Observe the following steps to set up the Z8 Encore! XP/Z8 Encore! development kit hardware and software:

1. Install the ZDS II software as described in Installing the ZDS II – Z8 Encore! Software on page 4.

2. For initial setup, ensure that the jumper JP4, DIS IRDA, is IN (shunt installed). For information on jumper descriptions, refer to the following Z8 Encore! XP Development Kit user manuals:
   – Z8 Encore! XP F0822 Series Flash Development Kit User Manual (UM0150)
   – Z8 Encore! XP F042A Series Development Kit User Manual (UM0166)
   – Z8 Encore! XP F082A Series Development Kit User Manual (UM0186)
   – Z8 Encore! XP F1680 28-Pin Series Development Kit User Manual (UM0203)
   – Z8 Encore! F083A Series Development Kit User Manual (UM0206)

3. Connect your PC to the Z8 Encore! XP/Z8 Encore! development board as follows:
   a. If your kit was supplied with the USB Smart Cable, follow the steps in Installing the USB Smart Cable on page 4.
   b. If your kit was supplied with the Serial Smart Cable, follow the steps in Connecting the Serial Smart Cable to the Development Board on page 7.

4. Connect the 5 V DC power supply to the adapter board.

5. Connect the development kit to your PC and run the supplied sample project as described in Getting Started Using ZDS II on page 8.

For information on developing an application for the development kit, refer to the ZDS II – Z8 Encore! User Manual (UM0130).

Installing the ZDSII – Z8 Encore! Software

Observe the following steps to install the ZDS II – Z8 Encore! software:

1. Insert the ZDS II CD into the CD-ROM drive. **DemoShield** launches automatically. If the **DemoShield** does not launch automatically, open the Windows Explorer, browse to your CD-ROM drive, and double-click launch.exe to launch the installer.

2. Click the **Install Products** button from the main installer menu.

3. From the product installer list you can choose to install ZDS II alone, or both ZDS II and associated documentation. You can also copy the documentation directly from your CD-ROM drive to your hard disk using Windows Explorer or read the documentation directly from the CD-ROM itself.

For customer service and technical support, Zilog recommends you to create an account on http://support.zilog.com.

Installing the USB Smart Cable

Observe the following steps for installing the USB Smart Cable and associated driver software.

32- and 64-Bit Windows 7

Observe the following steps to install the USB Smart Cable and associated driver software for Windows 7 systems.

1. Connect the USB Smart Cable to the host PC. **The Found New Hardware** dialog box should activate automatically.

2. Select **Locate and install driver software (recommended)**. The **User Account Control** window is displayed; click **Continue**. The **Driver Software Installation** window appears, followed by the **Found New Hardware-USB Smart Cable** dialog box.

3. Select **I dont have the disc. Show me other options.**

4. Select **Browse my computer for driver software (advanced)**.

5. Browse to one of the following driver directories:

   For 32-bit versions of Windows 7:
   ```
   <ZDS II Installation Directory>\device drivers\USB\x32
   ```

```
<ZDS II Installation CD>\device drivers\USB\x32
```

For 64-bit versions of Windows 7:

```
<ZDS II Installation Directory>\device drivers\USB\x64
```

```
<ZDS II Installation CD>\device drivers\USB\x64
```

6. Click **Next**.The **Windows Security** dialog box appears.

7. Select **Install this driver software anyway**.

8. When the software has been installed successfully, click **Close**.

32- and 64-Bit Windows Vista

Observe the following steps to install the USB Smart Cable and associated driver software for Windows Vista systems.

1. Connect the USB Smart Cable to the host PC. The **Found New Hardware** dialog box should activate automatically.

2. Select **Locate and install driver software (recommended)**. The **User Account Control** window is displayed; click **Continue**. The **Driver Software Installation** window is displayed, followed by the **Found New Hardware-USB Smart Cable** dialog box.

3. Select **I dont have the disc. Show me other options.**

4. Select **Browse my computer for driver software (advanced)**.

5. Browse to one of the following driver directories:

For 32-bit Vista systems:

```
<ZDS II Installation Directory>\device drivers\USB\x32
```

```
<ZDS II Installation CD>\device drivers\USB\x32
```

For 64-bit Vista systems:

```
<ZDS II Installation Directory>\device drivers\USB\x64
```

```
<ZDS II Installation CD>\device drivers\USB\x64
```

6. Click **Next**.The **Windows Security** dialog box appears.

7. Select **Install this driver software anyway.**

8. When the software has been installed successfully, click **Close**.

Windows XP

Observe the following steps to install the 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\x32
   ```

5. Upon finding the appropriate driver, click **Next**.

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

Windows 2000

Observe the following steps to install the 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\x32
   ```

6. Upon finding the appropriate driver, click **Next**.

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

Connecting the USB Smart Cable to the Development Board

> ⚠️ **Caution:** The power to the development board must be disconnected or turned OFF before connecting or disconnecting the USB Smart Cable.

Attach one end of the six-conductor ribbon cable (included) to the USB Smart Cable six-pin DBG connector (see Figure 1). Attach the free end of the ribbon cable to the DBG connector on the development board. Ensure that pin 1 on the ribbon cable (indicated by the dark stripe) is aligned with pin 1 on the target connector (indicated by a square silkscreen on the DBG pin).

**Figure 1. Connecting the Six-Conductor Ribbon Cable
to the USB Smart Cable**

Connecting the Serial Smart Cable to the Development Board

If you are using a Z8 Encore! XP/Z8 Encore! kit that is supplied with a Serial Smart Cable, your development PC communicates with the development board using the serial port of the PC. The Z8 Encore! Serial Smart Cable converts the RS-232 signals into the 3.3V bidirectional open-drain signals to communicate with the on-chip debugger.

> ⚠️ **Caution:** Always use a grounding strap to prevent damage resulting from electro-static discharge (ESD). Do not connect the power supply to the devel-

opment board before connecting the Z8 Encore! XP/Z8 Encore! Smart
Cable to both the host PC and development board.

Observe the following steps to connect the Serial Smart Cable to the development board:

1. Connect the serial port of the PC to the Z8 Encore! Smart Cable DB-9 female connector.

2. Connect the Z8 Encore! Smart Cable to the development board pin header P2.

Connecting Power to the Development Board

Connect the power supply to the development board at J1, then to an electrical outlet (see
Figure 2).
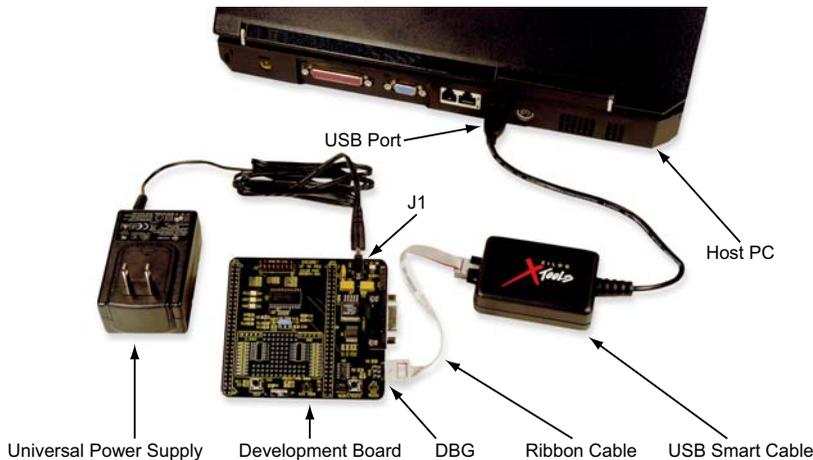
Figure 2. Development Board External Connections (USB Cable Installation Shown)

Getting Started Using ZDSII

Observe the following steps 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. Connect and apply power to the development board.

2. Run the ZDS II software. By default, the ZDS II program is located in the **Start** menu at **Programs → Zilog ZDSII Z8 Encore! <version_number> → ZDSII Z8 Encore! <version_number>.**

3. 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 `<CPU family>_ledBlink_asm\src` folder.

4. Browse to the **Samples** folder for the ledBlink.zdsproj file, located by default at:
```
c:\Program Files\Zilog\ZDSII_Z8Encore_<version_number>\Samples\
Z8xxxx_ledBlink\src
```
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.
```

5. Select the ledblink.zdsproj file and click **Open**. The initial ZDS II program screen is displayed (see Figure 3).

To view the project source files, click the plus sign to the left of 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.

6. Select the correct debug tool using **Project → Settings → Debugger → Debug Tool**. For example, select **USBSmartCable** when using the USB Smart Cable.

7. Click **F1** for more information on how to setup the debugger.

8. Click **OK**.

> **Note:** The following figures are for reference only.
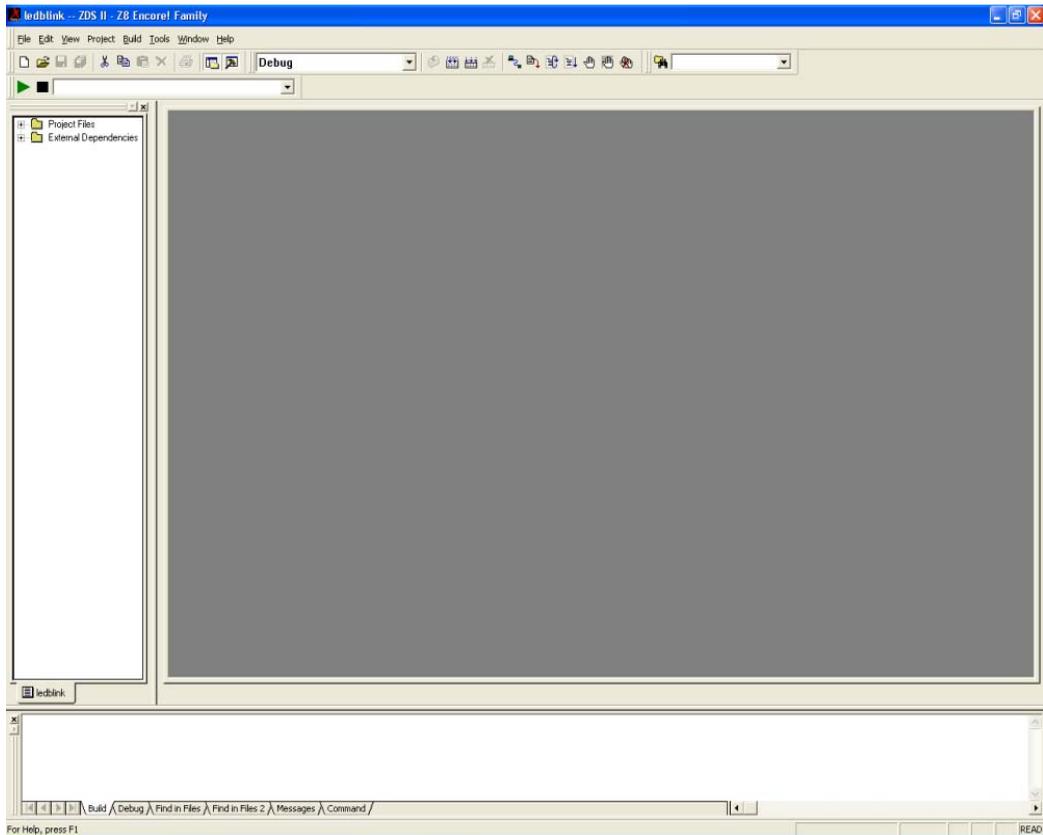
Figure 3. ZDSII Program Screen

9. Click the **Rebuild All** icon [icon] to build the project.

10. Click the **Reset** icon [icon] to connect and download the code to the development board.

11. Click **Go** icon [icon] to start the program (see Figure 4).
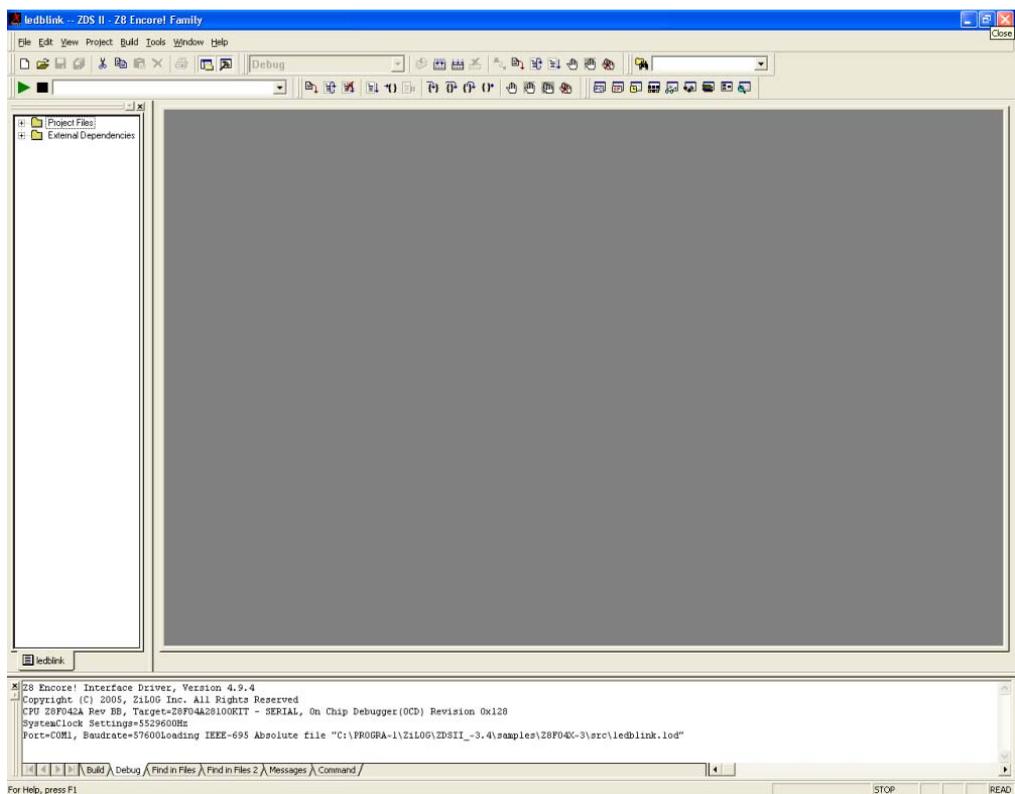
Figure 4. ZDSII Active Screen

12. The three LEDs on the development board blinks in sequence. If the LEDs do not blink, restart from Step 2 on page 9.

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

For more information on using ZDS II and building projects for the Z8 Encore! development kit, refer to the ZDS II – Z8 Encore! User Manual (UM0130).

> ⚠ **Warning:** DO NOT USE THIS PRODUCT IN LIFE SUPPORT SYSTEMS.

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