Z8 Encore! XP® Product Family

Z8 Encore! XP® Dual F1680 Series Development Kit

Quick Start Guide   QS003806-0111

Introduction

This Quick Start Guide describes how to setup Zilog's Z8 Encore! XP® Dual F1680 Series Development Kit and start using it to build designs and applications.

Kit Contents

Hardware

The Z8 Encore! XP Dual F1680 Development Kit contains the following hardware:

- Z8 Encore! XP Dual F1680 Series Development Board
- USB Smart Cable for connecting the PC to the development board
- 5 V DC universal power supply

Software (on CD-ROM)

The Z8 Encore! XP Dual F1680 Development Kit contains the following software:

- Zilog Development Studio II (ZDS II) – Z8 Encore!® IDE
- ANSI C-Compiler
- Sample code
- Acrobat Reader
- Document browser

Documentation

The Z8 Encore! XP F1680 technical documentation (on CD-ROM) include:

- – Z8 Encore! XP® Dual F1680 Series Development Kit User Manual (UM0212)
- – Zilog Developer Studio II – Z8 Encore!® User Manual (UM0130)
- – eZ8™ CPU User Manual (UM0128)
- – Z8 Encore! XP® F1680 Series Product Specification (PS0250)
- – Z8 Encore! XP® F1680 Series Product Brief (PB0164)

System Requirements

Table 1 lists the system requirements for running Zilog Developer Studio 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)	• RS232 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 is shipped 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 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.

Overview of Hardware and Software Setup Instructions

Observe the following steps to set up the Z8 Encore! XP Dual F1680 Series development kit hardware and software:

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

2. Connect your PC to the Z8 Encore! XP development board by following the instructions in Installing the USB Smart Cable.

3. Connect the 5 V DC power supply to the development board.

4. Run the supplied sample project as described in the Getting Started section on page 7.

For more details on developing an application for the development kit, refer to the Zilog Developer Studio II – Z8 Encore! User Manual (UM0130) and/or the Z8 Encore! XP Dual F1680 Series Development Kit User Manual (UM0212).

Installing the ZDS II–Z8 Encore! Software

Observe the following steps to install the software tools:

1. Insert the Zilog Developer Studio II CD into your computer's CD-ROM drive. **DemoShield** launches automatically. If **DemoShield** does not launch automatically, open the Windows Explorer, browse to your CD-ROM drive, and double-click the launch.exe file to launch the installer.

2. **DemoShield** provides several installation options. Select **Install Zilog Developer Studio** to install now. You can install other software and accompanying documentation later.

3. Follow the onscreen instructions to complete the installation.

Installing the USB Smart Cable

The USB Smart Cable installation procedure differs based on the type of Windows operating system on which you will run ZDS II. This section describes how to install the USB Smart Cable and associated driver software for your particular Windows OS.

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 is displayed.

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 don't 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 based on the Windows 7 OS you use.

    – For 32-bit Windows 7 systems:

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

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

    – For 64-bit Windows 7 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 is displayed.

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.

    a. Connect the USB Smart Cable to the host PC. The **Found New Hardware** dialog box is displayed.

    b. 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.

    c. Select **I don't have the disc. Show me other options.**

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

e. Browse to one of the following driver directories based on the Vista OS you use.

- 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`

f. Click **Next**.The **Windows Security** dialog box is displayed.

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

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

Windows XP

Observe the following steps to install the USB Smart Cable for a 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. Find the appropriate driver, and click **Next**.

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

Windows 2000

Observe the following steps to install the USB Smart Cable for a 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. Find the appropriate driver, and 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 as shown in 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.

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

Getting Started

For this demonstration, you must download code to the Master microcontroller unit (MCU) using ZDS II and then run the Slave MCU using a HyperTerminal window. Use the default settings for the board's jumper settings. For the default jumper settings, refer to the Shunt Settings for the F1680 Development Board in the Z8 Encore! XP Dual F1680 Series Development Kit User Manual (UM0212).

Download Code to the Master Microcontroller

Observe the following steps to download the `OcdDemo.zdsproj` code into the Master MCU U3.

1. On the Z8 Encore! XP Dual F1680 board, set the S2 switch toward U11 (Master). In this position, the board uses the Master MCU U3, as shown in Figure 2.
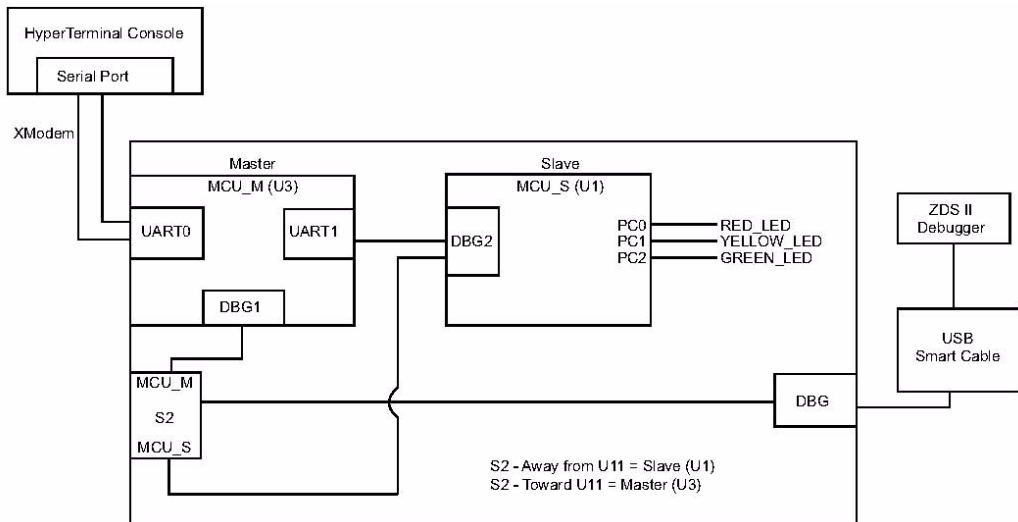
Figure 2. F1680 Development Board

2. Launch the HyperTerminal application.

3. Configure your connection with the following settings:

   Bits per second: 57600
   Data bits: 8
   Parity: None

Stop bits: 1
Flow control: None

4. Run the Zilog Developer Studio II software. By default, the Zilog Developer Studio II program is located in the **Start** menu; navigate via the following filepath:

    ```
    Programs → ZiLOG ZDS II - Z8 Encore! <version_number> → ZDS II
    -Z8 Encore! <version_number>
    ```

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

6. Browse to the `ledblink.zdsproj` file, located by default in the following filepath:

    ```
    C:\Program Files\ZiLOG\ZDSII_Z8Encore!_<version_number>\
    samples\XP_F1680\XP_F1680_44Pin_ledBlink\src
    ```

    where `<version_number>` is the ZDSII version number.

7. Select the `ledblink.zdsproj` file and click **Open**.

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

> **Note:** Click **F1** for additional information about how to set up the debugger.

9. Click **OK**.

10. Click the **Rebuild All** icon ▦ to build the project and to create the `ledblink.hex` file. Wait for the build to complete.

11. Select **Close Project** from the **File** menu.

12. 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.

13. Browse to the `OcdDemo.zdsproj` file, located by default in:

    ```
    C:\Program Files\ZiLOG\ZDSII_Z8Encore!_<version_number>\
    samples\XP_F1680\XP_F1680_44Pin_OcdDemo\src
    ```

    where `<version_number>` is the ZDSII version number.

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14. Select the OcdDemo.zdsproj file and click **Open**. The initial Zilog Developer Studio II program screen appears, see Figure 3 on page 9. To view the project source files, click the plus sign to the left of the **Standard 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:** Figure 3 through Figure 5 are for reference only. You might have a newer version of the software.
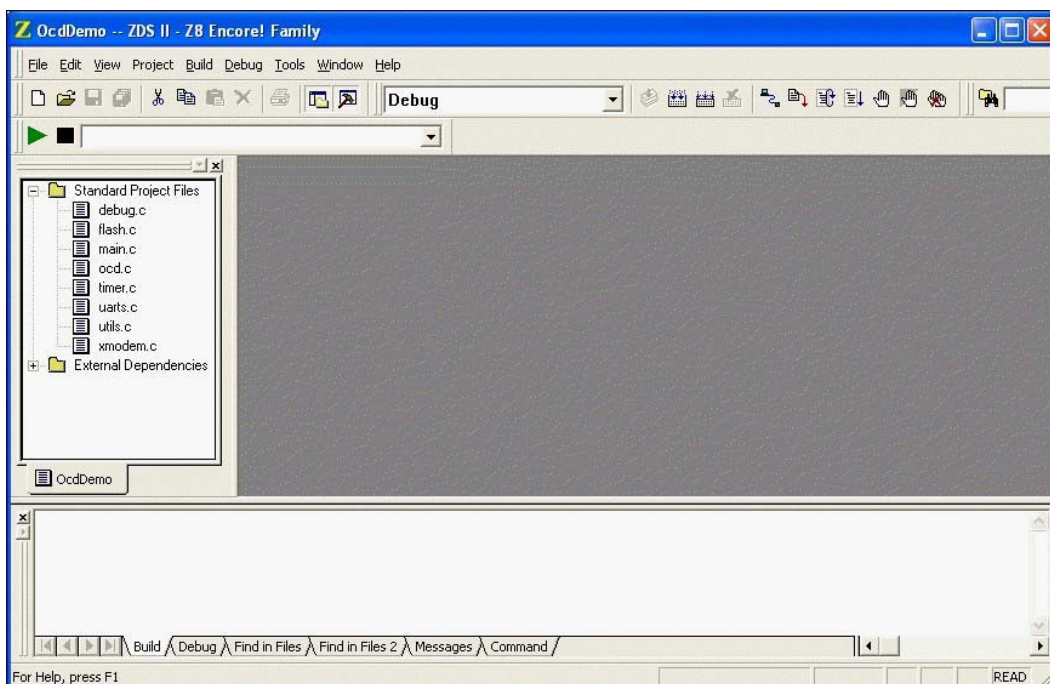
Figure 3. OcdDemo Opening Screen

15. Click **Rebuild All** icon 🛠️ to build the project. Wait for the build to complete.

16. Click **Reset** icon 🔧 to connect and download the code to the development board.
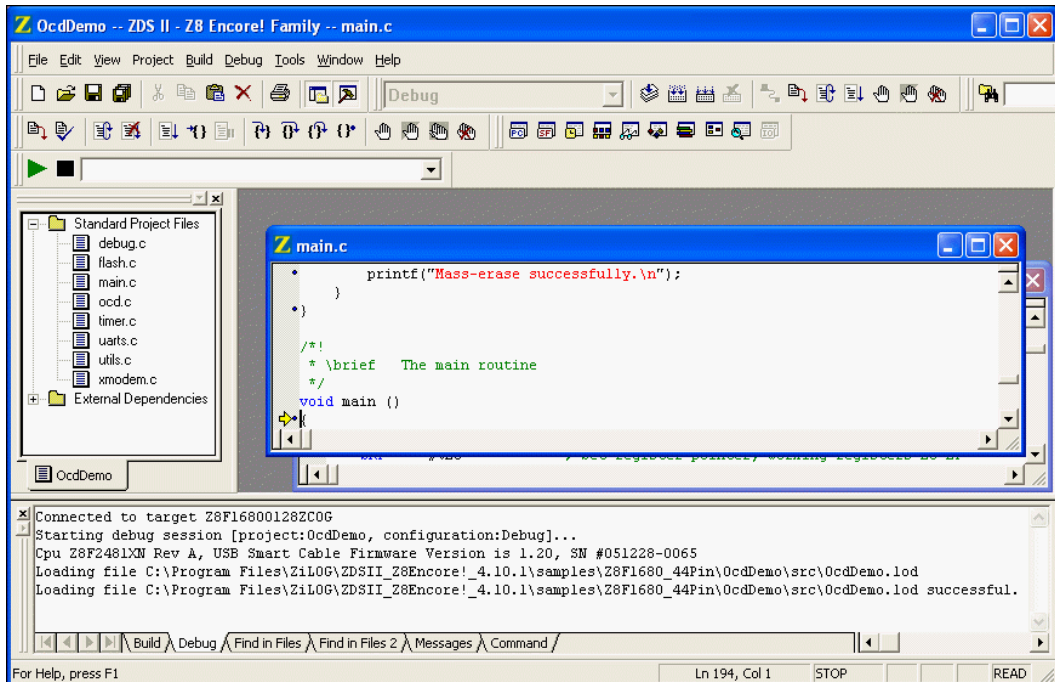
    The screen changes, as shown in Figure 4.

Figure 4. OcdDemo Active Screen

17. Click the **Stop Debugging** icon to stop the program.

18. Select **Close Project** from the **File** menu.

Run the OCD Demo in Standalone Mode

Observe the following steps to run the OCD demo in standalone mode (without ZDS II):

1. Disconnect the USB Smart Cable from the development board.

2. On the Z8 Encore! XP Dual F1680 board, set the S2 switch toward U11 (Master mode). In this position, the board uses the Master MCU U3 to control the Slave MCU (U1).

3. Press the **RESET** push button on the development board to reset the settings.

4. Using your keyboard, type h at the Z8Encore> prompt in the HyperTerminal window to see the available commands, as shown in Figure 5.
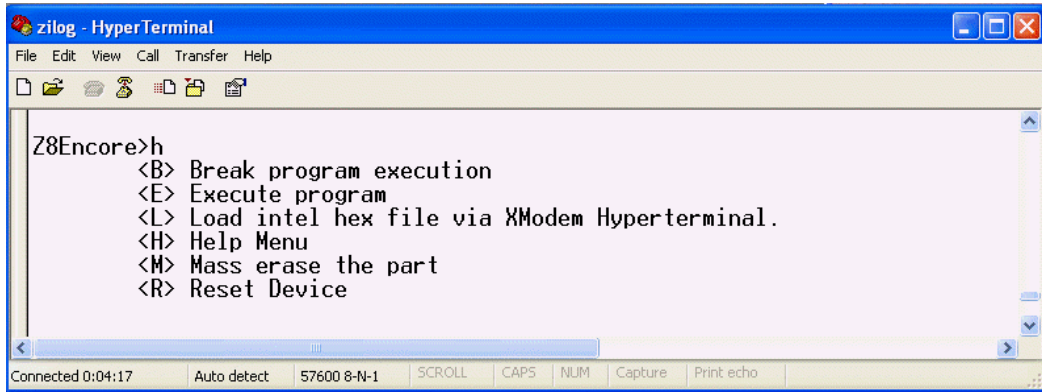
Figure 5. HyperTerminal Window

5. Enter a `l` in the HyperTerminal window to load a hexadecimal file.

6. In the HyperTerminal window, select **Send File** from the **Transfer** menu. The **Send File** dialog box appears.

7. Browse to the `ledblink.hex` file, located by default in the following filepath:

    ```
    C:\Program Files\ZiLOG\ZDSII_Z8Encore!_<version_number>\
    samples\XP_F1680\XP_F1680_44Pin_ledBlink\output
    ```

    where `<version_number>` is the ZDSII version number.

8. Select the `ledblink.hex` file and click **Open**. Ensure that the protocol is set to **Xmodem**.

9. Click **Send**.

10. When the file is loaded, enter `r` via your keyboard to reset the device.

11. Enter `e` via your keyboard to execute the program. The three LEDs on the development board begin blinking in sequence. If the LEDs do not blink, start over from Step 1 on page 10.

12. Type `b` to stop the program.

For more information about using Zilog Developer Studio II and building projects for your Z8 Encore! XP Dual F1680 Series Development Kit, refer to the Zilog Developer Studio II – Z8 Encore! User Manual (UM0130).

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

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