USB Smart Cable

User Manual

UM018114-0513

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

LIFE SUPPORT POLICY

ZILOG'S PRODUCTS ARE NOT AUTHORIZED FOR USE AS CRITICAL COMPO-
NENTS IN LIFE SUPPORT DEVICES OR SYSTEMS WITHOUT THE EXPRESS
PRIOR WRITTEN APPROVAL OF THE PRESIDENT AND GENERAL COUNSEL OF
ZILOG CORPORATION.

As used herein

Life support devices or systems are devices which (a) are intended for surgical implant
into the body, or (b) support or sustain life and whose failure to perform when properly
used in accordance with instructions for use provided in the labeling can be reasonably
expected to result in a significant injury to the user. A critical component is any compo-
nent in a life support device or system whose failure to perform can be reasonably
expected to cause the failure of the life support device or system or to affect its safety or
effectiveness.

Document Disclaimer

Revision History

Each instance in the following revision history table reflects a change to this document from its previous version. For more details, refer to the corresponding pages provided in the table.

Date	Revision Level	Description	Page
May 2013	14	Updated maximum System Clock value, Supported Target Environments table.	2
Oct 2012	13	Updated to conform to Zilog style.	All
Sep 2008	12	Updated the Connecting to the Target Board section.	5
Apr 2008	11	Updated the USB Smart Cable Firmware Compatibility and Installing the USB Smart Cable and Driver sections.	2
Dec 2007	10	Added support for Windows 32-bit Vista systems and USB Smart Cable firmware compatibility information.	All

USB Smart Cable

Zilog's USB Smart Cable device, part number ZUSBSC00100ZACG, allows you to connect Z8 Encore!®, Z8 Encore! XP®, ZNEO®, and eZ80Acclaim!® development boards to a high-speed or full-speed USB port on a Zilog Developer Studio II (ZDS II) host system.

This user manual provides instructions for installing USB Smart Cable hardware and its associated drivers. When the USB Smart Cable is connected and the drivers are installed, you can proceed with debugging, as described in the development kit documentation that applies to these development boards.

Kit Contents

The contents for the USB Smart Cable kit are:

- USB Smart Cable
- Six-conductor ribbon cable
- This USB Smart Cable User Manual (UM0181)

Supported Host Environments

The supported host environments are:

- A host PC with ZDS II v4.9.0 or later version for Z8 Encore! and eZ80Acclaim!, or ZDS II v4.10.0 for ZNEO. For ZDS II host system requirements, refer to the development kit quick start guide that applies to the Zilog CPU family that you are using.

- One USB high-speed or full-speed port on the host chassis or a powered hub. The USB Smart Cable cannot operate properly on an unpowered hub; i.e., a hub without a separate AC adapter.

> ➤ **Note:** Windows NT hosts are not supported by the USB Smart Cable.

Table 1. Supported Target Environments

Development Board	System Clock		Power Supply		
	Minimum	**Maximum**	**Minimum**	**Maximum**	**Current**
Z8 Encore!®, Z8 Encore! XP®	32 kHz	24 MHz	2.7 V	3.6 V	2 mA
ZNEO®	10 kHz	20 MHz	2.7 V	3.6 V	2 mA
eZ80Acclaim!®	5 MHz	50 MHz	3.0 V	3.6 V	2 mA

Table 2. USB Smart Cable Firmware Compatibility

CPU Family	Firmware
Z8 Encore!®, Z8 Encore! XP®, ZNEO®, eZ80Acclaim!®	1.6

Installing the USB Smart Cable and Driver

Before connecting the USB Smart Cable to your system, Windows loads the appropriate driver from the ZDS II installation directory or CD-ROM. You can download ZDS II software for a specific device family for free from the Zilog Store. Alternatively, if you have an applicable Zilog development tool, use the CD-ROM provided. The installation procedure depends on your Windows operating system version.

> ➤ **Note:** Zilog no longer includes CD-ROMs with USB Smart Cable kits built after August 2006.

Windows 7 32-Bit and 64-Bit Systems

1. Connect the USB Smart Cable to the host PC. A Windows message appears, stating `Driver Software Installation`.

2. Windows automatically searches for the driver. This process can take a while to complete. However, because there is no option to terminate this process immediately, Zilog advises waiting for the search to complete. If the driver was previously installed on your system, Windows automatically installs the USB Smart Cable driver. If this is the case, skip ahead to Step 8. If the driver was not found, close the Search dialog and proceed to Step 3.

3. Go to the Windows **Start** menu and, in the **Search programs and files** field, enter `Device Manager`. The Windows Device Manager should appear in the list of returned items in your search; click this item to launch the Device Manager.

4. A selection labeled **Other devices** should appear in the list of hardware devices currently running in the Device Manager. Click the arrow to the left of **Other devices** to display these additional devices.

5. Right-click **USB Smart Cable** to select **Update Driver Software**, which will display the Update Driver Software - USB Smart Cable dialog.

6. Select the **Browse my computer for driver software** option in this dialog, then browse to one of the following driver directories:

    32-bit systems:
    ```
    <ZDS II Installation Directory>\device drivers\USB\x32
    <ZDS II Installation CD>\device drivers\USB\x32
    ```

    64-bit systems:
    ```
    <ZDS II Installation Directory>\device drivers\USB\x64
    <ZDS II Installation CD>\device drivers\USB\x64
    ```

7. Click **Next** to install the driver. In 32-bit systems, the Windows Security dialog will appear; click **Install this driver software anyway**.

8. Click **Close** after the Wizard finishes the installation.

Windows Vista 32-Bit and 64-Bit Systems

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

2. In this dialog, select **Locate and install driver software (recommended)**. When the User Account Control window appears, 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:

   32-bit Vista systems:

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

   64-bit Vista systems:

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

6. Click **Next** to display the Windows Security dialog box.

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

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

Windows XP 32-Bit Systems

1. Connect the USB Smart Cable to the host PC. The Found New Hardware Wizard should activate automatically upon connecting the USB

Programmer for the first time. If you are prompted to connect to Windows Update, click **No, not at this time**.

2. Select **Install from a list or specific location (Advanced)**, then click **Next**. 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:**, then locate and click the following directory:

   `<ZDS installation>\device drivers\USB\x32`

4. Click **Next.** After the appropriate driver information has been found, click **Next** a second time.

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

Connecting to the Target Board

Observe the following steps to complete the power-on sequence before connecting to the target.

1. Connect the USB Smart Cable to the host PC.

2. Connect the USB Smart Cable six-pin connector to the target board.

3. Apply power to the target board. If the target is not connected properly, remove the USB Smart Cable from the host PC and repeat the preceding steps. If the connection is problematic, refer to the Troubleshooting Tips section, which follows on the next page.

4. Attach one end of the six-conductor ribbon cable to the Smart Cable six-pin DBG connector, as shown in Figure 1. Attach the free end of the ribbon cable to the 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.

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

To learn more about connecting the USB Smart Cable to your target board, refer to the eZ80Acclaim! Design for Debug Technical Note (TN0035) or the Z8 Encore! Design for Debug Technical Note (TN0036).

Troubleshooting Tips

If a hardware failure is suspected, contact support.zilog.com for assistance. Before submitting a problem report to Zilog Customer Support, follow the instructions in this section.

USB Smart Cable Not Recognized

Disconnect all other USB devices (including your keyboard and mouse if you can use PS2 ports instead). Ensure that the USB Smart Cable is plugged in directly, with no intervening hub. If the issue is resolved, reconnect your devices one at a time to isolate the conflicting device.

Host Does Not Boot

Systems with one or more USB devices connected may not boot properly after you connect the USB Smart Cable. This issue is being investigated by Zilog Engineering. As a workaround, connect the USB Smart Cable after the system starts.

Customer Support

To share comments, get your technical questions answered, or report issues you may be experiencing with our products, please visit Zilog's Technical Support page at <u>support.zilog.com</u>.

To learn more about this product, find additional documentation, or to discover other facets about Zilog product offerings, please visit the <u>Zilog Knowledge Base</u> or consider participating in the <u>Zilog Forum</u>.

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