



# Opto-Isolated USB Smart Cable

## User Manual

UM019502-0606

## Introduction

Thank you for purchasing the ZiLOG Opto-Isolated USB Smart Cable (Figure 1). The opto-isolated USB Smart Cable lets you connect your target Z8 Encore!<sup>®</sup> or Z8 Encore! MCT<sup>™</sup> development board to a high-speed or full-speed USB port on your ZiLOG Developer Studio II (ZDSII) host system. Its internal optoisolator electrically isolates the development kit circuitry from the USB Smart Cable.

This User Manual tells you how to install the USB Smart Cable for the first time and load the necessary driver software. After connecting the USB Smart Cable and installing the driver, you can proceed with debugging as described in your development kit documentation.

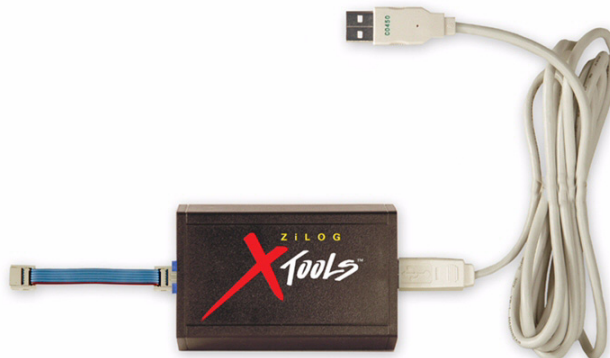


Figure 1. Opto-Isolated USB Smart Cable

## Kit Contents

- USB Smart Cable
- USB cable, Type A to Type B
- Six-conductor ribbon cable
- User Manual



## Supported Host Environments

- A host running ZiLOG Developer Studio II (ZDSII) software version 4.9.4 or later. See your development kit Quick Start guide for ZDSII host system requirements. Download the latest version of ZDS II for your system by visiting us on the web at <http://www.zilog.com/software/zds2.asp>.
- ▶ **Note:** Windows NT hosts are not supported by the USB Smart Cable.
- 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).

## Supported Target Environments

Development Board	System Clock		Power Supply Current		
	Min	Max	Min	Max	
Z8 Encore!®	32KHz	20MHz	2.7V	3.6V	25 mA
Z8 Encore! MC™	32KHz	20MHz	2.7V	3.6V	25 mA

## Installing the USB Smart Cable and Driver

The first time you connect a USB Smart Cable to your system, you need to help Windows load the appropriate driver from the ZDSII installation directory or CD-ROM. You can download ZDSII software from [www.ZiLOG.com](http://www.ZiLOG.com). You only need to help Windows locate the driver once. The procedure depends on your Windows operating system version.

If you previously installed the USB Smart Cable as part of another ZiLOG Development Kit, you do not need to install the driver. Plug your USB Smart Cable into an available USB port and the system will install the driver automatically.

- ▶ **Note:** If you have downloaded the latest version of ZDS II, please install it first before proceeding.

### Windows XP

1. Connect the USB Smart Cable to the host PC for the first time.  
The Found New Hardware Wizard should activate automatically.

2. In the Wizard, 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 driver directory, one of the following:  
<ZDSII Installation Directory>\device drivers\USB  
<ZDSII Installation CD>\Device Drivers\USB
5. Click **Next**, and then click **Next** again after the appropriate driver is found.
6. Click **Finish** to complete the installation.

### Windows 2000

1. Connect the USB Smart Cable to the host PC for the first time.  
The Found New Hardware Wizard should activate automatically.
2. In the Wizard, click **Next**.
3. Select **Search for a suitable driver for my device (Recommended)**; then click **Next**
4. Select **Specify a location**; then click **Next**.
5. Browse to the driver directory, one of the following:  
<ZDSII Installation Directory>\device drivers\USB  
<ZDSII Installation CD>\Device Drivers\USB
6. Click **OK**, and then click **Next** after the appropriate driver is found.
7. Click **Finish** to complete the installation.

### Windows 98SE

1. Connect the USB Smart Cable to the host PC for the first time.  
The Found New Hardware Wizard should activate automatically.
2. In the Wizard, click **Next**.
3. Select **Search for the best driver for your device (Recommended)**; then click **Next**
4. Select **Specify a location**; then browse to the driver directory, one of the following:  
<ZDSII Installation Directory>\device drivers\USB  
<ZDSII Installation CD>\Device Drivers\USB
5. Click **Next**, and then click **Next** again after the appropriate driver is found.

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

## Connecting to the Target Board

Attach one end of the six-conductor ribbon cable to the Smart Cable six-pin DBG connector. See Figure 2. 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. For further information on connecting the USB Smart Cable to your target board, refer to the *Z8 Encore! Design for Debug Technical Note TN0036*.

► **Note:** A half-twist in the ribbon cable between the ZiLOG-manufactured target board and the opto-isolated USB Smart Cable is normal.

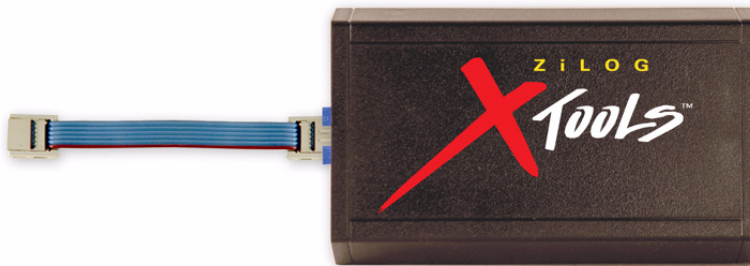


Figure 2. Connecting the Six-Conductor Ribbon Cable to the USB Smart Cable

## Troubleshooting

Before contacting ZiLOG Customer Support to submit a problem report, please follow these simple steps. If a hardware failure is suspected, contact a local ZiLOG representative for assistance.

### USB Smart Cable Not Recognized

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



## Host Does Not Boot

Some systems with one or more other USB devices connected may not boot properly after you connect the USB Smart Cable. This issue is being investigated. In the meantime, the workaround is to connect the USB Smart Cable after the system starts.

## Contacting ZiLOG Customer Support

For additional troubleshooting solutions, see ZDSII Online Help.

For valuable information about hardware and software development tools, visit [ZiLOG Customer Support](#) online. Download the latest released version of [ZiLOG Developer Studio!](#)

Get the latest [software updates](#) from ZiLOG as soon as they are available!



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  
Telephone: 408.558.8500  
Fax: 408.558.8300  
[www.ZiLOG.com](http://www.ZiLOG.com)

**Document Disclaimer**

ZiLOG is a registered trademark of ZiLOG Inc. in the United States and in other countries. All other products and/or service names mentioned herein may be trademarks of the companies with which they are associated.

©2006 by ZiLOG, Inc. All rights reserved. Information in this publication concerning the devices, applications, or technology described is intended to suggest possible uses and may be superseded. ZiLOG, INC. DOES NOT ASSUME LIABILITY FOR OR PROVIDE A REPRESENTATION OF ACCURACY OF THE INFORMATION, DEVICES, OR TECHNOLOGY DESCRIBED IN THIS DOCUMENT. ZiLOG ALSO DOES NOT ASSUME LIABILITY FOR INTELLECTUAL PROPERTY INFRINGEMENT RELATED IN ANY MANNER TO USE OF INFORMATION, DEVICES, OR TECHNOLOGY DESCRIBED HEREIN OR OTHERWISE. Devices sold by ZiLOG, Inc. are covered by warranty and limitation of liability provisions appearing in the ZiLOG, Inc. Terms and Conditions of Sale. ZiLOG, Inc. makes no warranty of merchantability or fitness for any purpose. Except with the express written approval of ZiLOG, use of information, devices, or technology as critical components of life support systems is not authorized. No licenses are conveyed, implicitly or otherwise, by this document under any intellectual property rights.