

## Introduction

This User Manual describes how to setup and use Zilog's Z8 Encore!<sup>®</sup> Smart Cable with Z8 Encore! development kit. This can also be used for Z8 Encore! XP<sup>®</sup> development kit. The Z8 Encore! Smart Cable converts the RS-232 signals into the 3.3 V bidirectional open-drain signals required to communicate using the DBG pin to the Zilog on-chip debugger of the Z8 Encore!. The Smart Cable features a 9-pin DB serial connector on one end and a box with a 6-pin DBG Interface Connector on the other end.

The development kit includes the following (see [Figure 1](#)):

- Smart Cable
- User Manual



**Figure 1. Z8 Encore! Smart Cable**

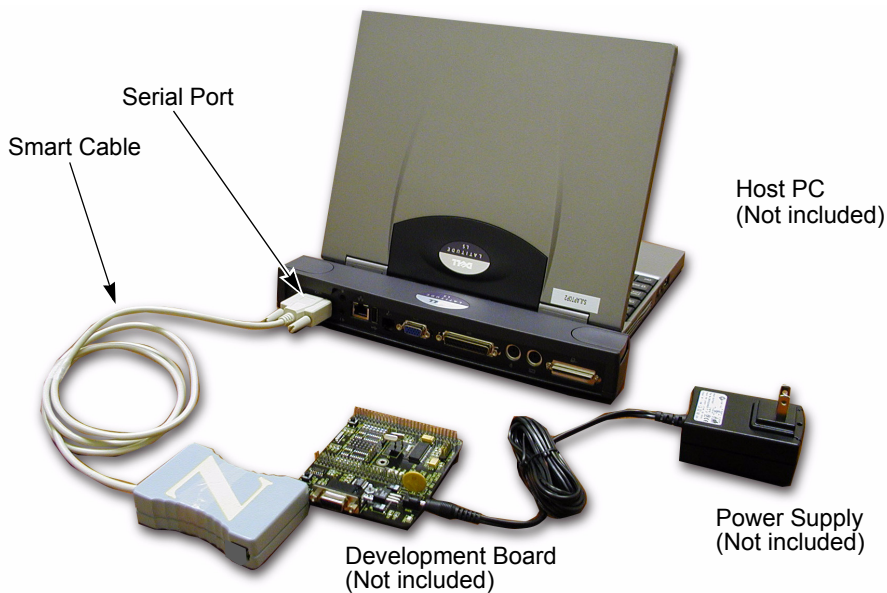
## Voltage and Current Requirements

The voltage and current requirements of the Z8 Encore!® Serial Smart Cable include:

- System Clock: 153.6 kHz minimum, 20 MHz maximum
- Power Supply: 3.0 V minimum, 3.6 V maximum
- Current: 35 mA at 3.3 V

## Connecting the Z8 Encore! Smart Cable to Your Computer

Connect the Z8 Encore! Smart Cable to a COM port on your computer using the 9-pin DB serial connector (see [Figure 2](#)).



**Figure 2. Connecting the Z8 Encore! Smart Cable to Your Computer**

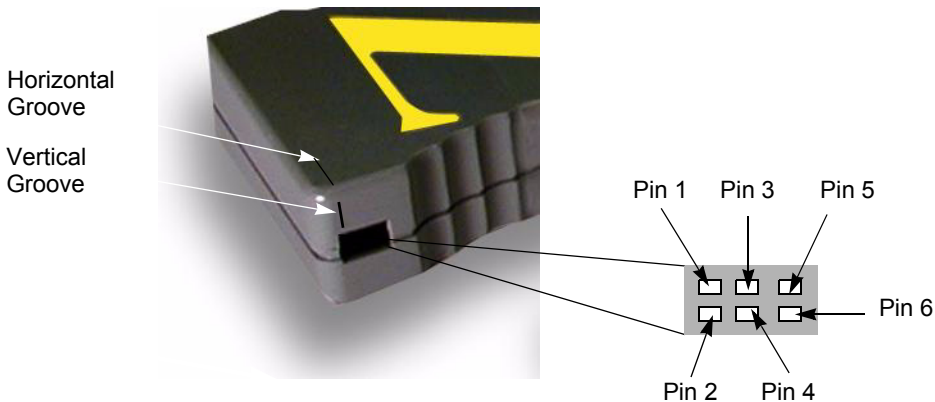
## Connecting the Smart Cable to Your Development Board

To use the Z8 Encore! Smart Cable, connect the application board to the Smart Cable 6-pin DBG connector. Ensure that Pin 1 of the application lines up with Pin 1 of the DBG connector, indicated by the horizontal/vertical groove over the Pin 1 placement (see [Figure 3](#) on page 3). For more information on interfacing the Smart Cable to your target board, refer to *Z8 Encore!® Design for Debug Technical Note (TN0036)*.



**Caution:** *The power to your design/application board must be turned OFF when connecting or disconnecting the Smart Cable.*

► **Note:** *The Smart Cable receives power from the target design/application board.*



**Figure 3. DBG Interface Connector Pin 1 Location**

Consider the following points when connecting the Smart Cable to your development board:

- The DBG interface connector requires the  $V_{DD}$ ,  $V_{SS}$ , and the DBG signals from the Z8 Encore! on your design/application board.
- The minimum signal connections required to connect the Z8 Encore! to the Smart Cable are the  $AV_{DD}$ ,  $V_{DD}$ ,  $AV_{SS}$ ,  $V_{SS}$ , and the DBG pin signals.
- The  $AV_{DD}$  must be externally connected to the  $V_{DD}$ . The  $AV_{SS}$  must also be externally connected to the  $V_{SS}$ .
- The Z8 Encore! must be clocked to generate the DBG timing signals. For the recommended crystal oscillator circuit, refer to Product Specification of target MCU.

► **Note:** *You must enter the crystal frequency running the Z8 Encore! device when creating a new project in ZDS II.*

Follow the steps below to provide the crystal frequency:

1. Select **Settings** from the **Project** menu.

2. Select **Configuration: Debug** in the drop-down **List** box in the upper left corner of the **Settings** dialog box.
3. Select **Debugger** → **Target Name** → **Z8F64200100KITG** or **Z8F0800100KITG**.
4. Select **Debugger** → **Target** → **Setup**.
5. Select either **Clock Frequency** or **Other**. If you select **Other**, enter the X1 Crystal frequency in units of MHZ. Click **OK**.
6. Select **Debugger** → **Debug Tool** → **SerialSmartCable**.
7. Select **Debugger** → **Debug Tool** → **Setup**.
8. Select the appropriate COM port and Baud Rate.

Figure 4 displays the connection of Smart Cable and Z8 Encore!® device.

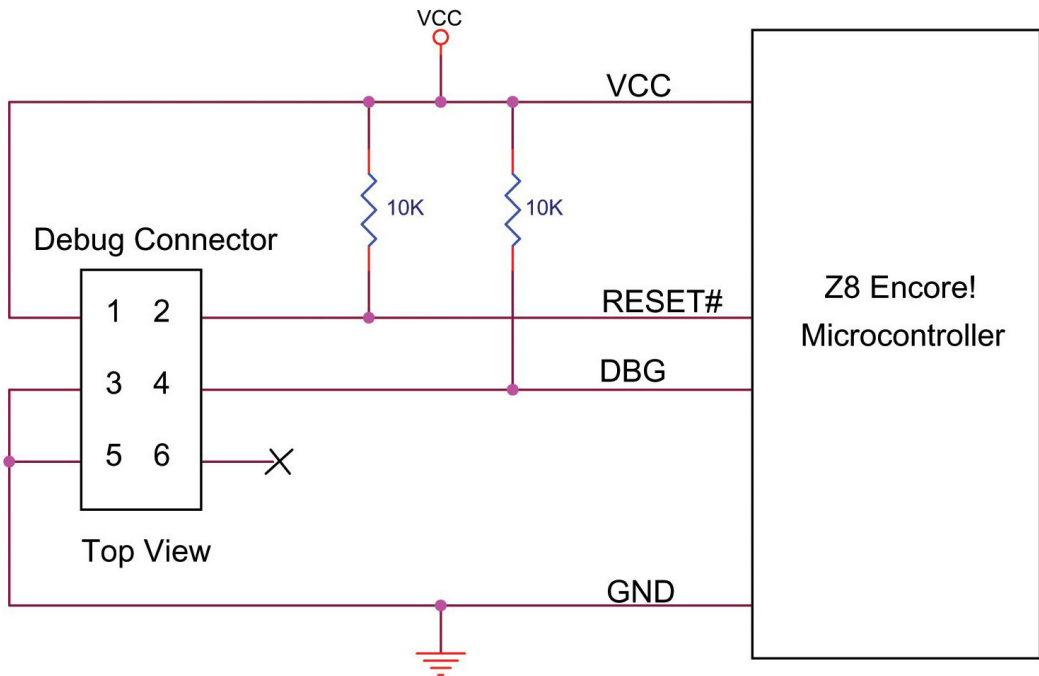


Figure 4. Connection Between Smart Cable and Z8 Encore! Device

## **Compatibility with Microsoft Operating Systems**

The Z8 Encore!® Smart Cable is compatible with the following Microsoft operating systems when connected directly to the serial port of the PC:

- WIN98E
- WIN NT
- WIN2000
- WIN XP
- WIN VISTA



**Warning:** DO NOT USE IN LIFE SUPPORT

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