



CY3261A-RGB

EZ-Color™ Evaluation Kit Board Guide

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1.1 Introduction

The purpose of the CY3261A-RGB demonstration board is to use Cypress's EZ-Color™ HB-LED Controller powered by PrISM™ and PSoC® technology to control three primary, high power LEDs, creating mixed-color output. The three LEDs used on the CY3261A-RGB demonstration board are the primary colors red, green, and blue. Depending upon the application and the desired color gamut, LEDs of any three colors can be used in a design.

One side of the board contains the high brightness LEDs used to demonstrate color mixing by the EZ-Color HB LED controller (see [Figure 1-1](#)). The LEDs are placed within a permanently attached, hexagonally shaped diffuser housing. **This housing should not be removed.**

Figure 1-1. Demonstration Board, LED Side

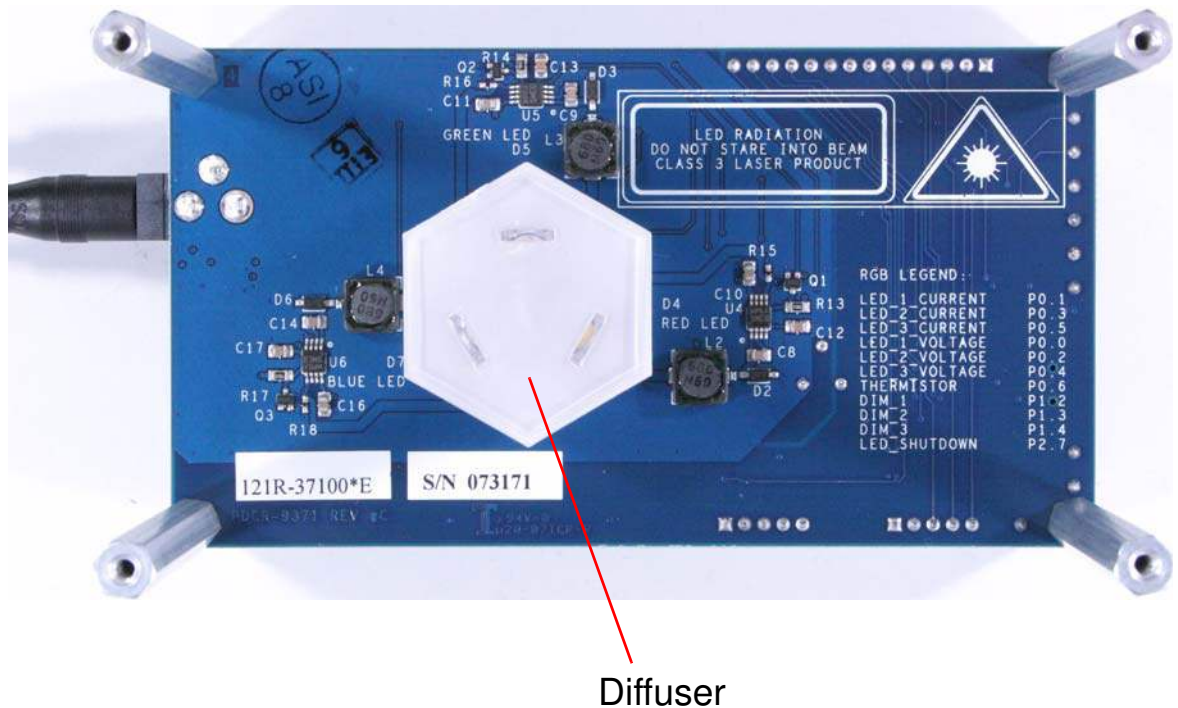
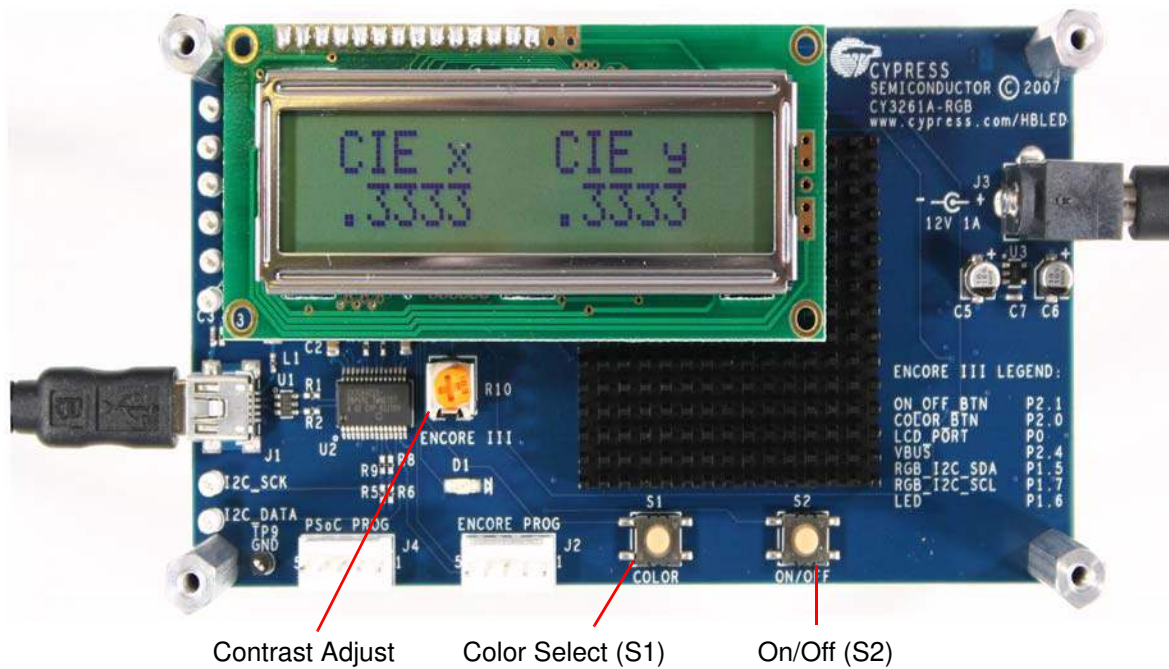


Figure 1-2. CY3261A-RGB Demonstration Board, Control Side.



1.2 Onboard Control

1.2.1 The ON/OFF Button

The RGB board has two buttons (labeled 'S1' and 'S2') and a liquid crystal display on the opposite side of the board from the high power LEDs. These buttons allow the board to be demonstrated without using a personal computer to control the board. When held properly for use, the buttons are on the bottom edge of the board and the liquid crystal display is at the top left edge of the board. When held in this orientation, button S2 (the right-most button) alternately turns the LEDs ON and OFF. The default setting, when power is applied, is OFF. Pressing button S2 illuminates the LEDs.

Caution: The purpose of this demonstration board is to demonstrate the use of an EZ-Color HB-LED Controller for controlling high brightness LEDs. **DO NOT LOOK AT THE HIGH BRIGHTNESS LEDs WHEN THEY ARE ILLUMINATED!** These devices can cause permanent eye damage, even when viewed for a short time!

1.2.2 The Color Selection Button

Button S1 (the left-most button along the bottom edge of the board) cycles between seven preset colors. The initial color is white. Pressing button S1 changes to the next color of the seven preset colors. The sequence displayed is white (power on default), red, green, blue, yellow, magenta, and cyan.

Note If the board is controlled from a personal computer using the USB interface, the color displayed upon power up and pressing the **ON/OFF** button will be the last color setting selected using the application. If the board has never been controlled from a personal computer, or the last color selected could not be displayed at the selected flux, the LEDs do not illuminate (an impossible color

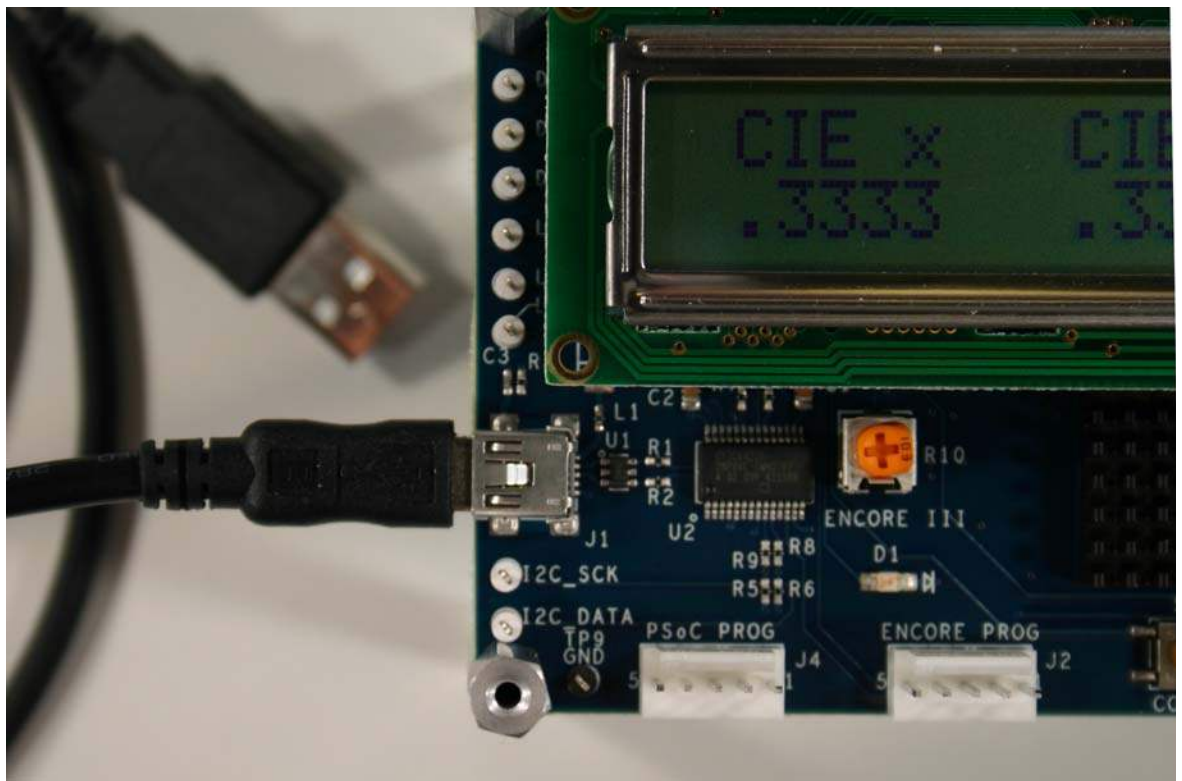
is stored in Flash). Pressing the **color selection** button selects a valid color for display from the seven preset colors and the LEDs illuminate with that color.

1.3 Application Control

The board is controlled using the Windows application provided on the kit CD. This application is installed on a personal computer running either Windows XP or Windows Vista. See the *CY3261A-RGB Evaluation Kit Application Guide*, included on the CD, for details about how to install and use the RGB application.

When using the board with the RGB application, the board must be attached to the computer using a USB cable (included, see [Figure 1-3](#)). The board can be attached to the computer before or after the application is started.

Figure 1-3. RGB Board with USB Control Cable Attached



1.4 The Liquid Crystal Display (LCD)

The LCD displays the currently selected color using CIE 1931 color coordinates. The values displayed represent the present color, whether chosen from the seven preset colors or selected from the control application running on a personal computer. If the LEDs are illuminated, an asterisk (*) is shown to the left of the display in the top row of the LCD. (This is useful if the last color selected cannot be displayed with the given LEDs).

Note When the board is used the first time, it might be necessary to adjust the contrast for the LCD (“Contrast adjust,” [Figure 1-2 on page 6](#)). This control is an orange capped potentiometer (R10) located directly below the LCD offset to the left of the LCD’s center. The control is adjusted using an appropriately sized tool. Turning the potentiometer clockwise increases the contrast, turning it counter-clockwise decreases the contrast.

1.5 Document Revision History

Document Title: RGB Light Demo Board Guide				
Document Number: 001-15643				
Revision	ECN#	Issue Date	Origin of Change	Description of Change
**	1142963	June 11, 2007	KKVTMP	New guide for the CY3261A-RGB EZ-Color Evaluation Kit