

Lesson 4-1 Graphics Library

Hi, I'm Alan Hawse. I'm Senior Vice President of Technical Staff for Solutions and Software here at Cypress Semiconductor. Let's talk about using the U8G library to display information on this shield.

If you don't have the shield, you can reproduce most of these exercises using a U8G compatible display of your own and then wiring it to the appropriate pins. To get a U8G display, search for "128x64 OLED Display" on eBay or amazon.com and you'll find lots of choices for only a few dollars.

First, let's create a folder to hold the chapter 4 projects, then I'll copy the snip project called graphics/hello to be called ww101/04/02_hello. Remember that these snip projects are there to give you building blocks to help you accelerate your own firmware development. Then, update the names of the files and update the make file. Let's also create a make target for our new project.

Now, open up 02_hello.c. The U8G display communicates using I2C. Specifically, it's an I2C slave using address hex 3C. On our shield, the display is connected to the WICED_I2C_2 pins on the chip. You can see that an I2C structure is already set up for a device connected to WICED_I2C_2 with the appropriate address, which is hex 3C (0x3C). We're going to change the speed mode from I2C_HIGH_SPEED_MODE to be I2C_STANDARD_SPEED_MODE, but otherwise no changes are needed.

Note that API functions are provided to initialize the I2C interface which we will call oled_display, and to initialize a structure called u8g. Once that's done, we use various library functions to display the message "Hello World!" to the screen. The standard first project that you always do.

Now program the project and let's see what it does. Hey look, it says "Hello World!" That's just what we were hoping for.

A second example called snip/graphicstest shows a little bit more complex example.

Let's copy that project to be 02b_graphicstest, and then update all of the other necessary places. Remember to change the I2C speed to be I2C_STANDARD_SPEED_MODE.

Once that's done, program the board and check out all of the moving graphics display stuff that's going on. That's really cool for only a few dollar display.

As always, you can post your comments and questions in our Wi-Fi developer community or you are welcome to email me at alan_hawse@cypress.com or tweet me at @askioexpert. Thank you!